### MAGAZINE REPORT

Material Handler(s): Ed Moss  
Date: 4-11-13

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>CODE NUMBERS</th>
<th>QUANT. (case)</th>
<th>QUANT. (lbs)</th>
<th>MAGAZINE OUT OF</th>
<th>MAGAZINE INTO</th>
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<tbody>
<tr>
<td>SMOKELESS</td>
<td>846</td>
<td>6 @ 140</td>
<td>17 @ 25</td>
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<tr>
<td>SMOKELESS</td>
<td>1183</td>
<td>1 @ 140</td>
<td>17 @ 25</td>
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019259  
EXP_000893
**STRAIGHT BILL OF LADING**

RECEIVED: subject to the classification and tariffs in effect on the date of the issue of this Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry the said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, (the word property being understood to mean the property itself and all papers relating thereto) hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (t) in Uniform Freight Classification in effect on the date hereof, (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment, or (3) in the applicable rail or water classification if this is a rail or water shipment, or (4) if the property is being moved by a combination of means, the tariffs which govern the transportation of the shipment, and the said terms and conditions are hereby agreed to by the shipper and acceptor.

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>UN No.</th>
<th>UN No.</th>
<th>25% of PKGS</th>
<th>UN No.</th>
<th>UN No.</th>
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</thead>
<tbody>
<tr>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td>019260</td>
<td>019260</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature: [Signature]

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-9300 IN CANADA (ERP #2-0040) 800-561-3838 ELSEWHERE CALL (703) 527-3887

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By: [Signature]

Authorized Receiver: [Signature]

Exp. Date: 6/1/14

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Shipped By: [Signature]

Consignee: [Signature]

Company Name: [Company Name]

FED LIC.: 5-OR-097-202-4F-00158

Customer No.: 405-832-1205

Rel. No.: [Rel. No.]

Charge Account: [Charge Account]

Freight Charges: Collect

Prepaid

Location No.: [Location No.]

P.O. No.: [P.O. No.]

Customer No.: [Customer No.]

Truck No.: [Truck No.]

Trailer No.: [Trailer No.]

Mileage: [Mileage]

Packages: [Packages]

Gross Weight: [Gross Weight]

Net Explosive Weight: [Net Explosive Weight]

Emergency Response Procedure: [Emergency Response Procedure]

Exempt: [Exempt]

Placards Applied to Railcar or Motor Vehicle: [Placards Applied to Railcar or Motor Vehicle]

Local Federal Explosives License No.: [Local Federal Explosives License No.]

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055

Per: [Per]

Location: [Location]

Hazardous Material Handling Number: [Hazardous Material Handling Number]

Local Federal Explosives License No.: [Local Federal Explosives License No.]

(Signature)

DOT: [DOT]

EMPLOYEES: [Employees]

Received By: [Received By]

Date: [Date]

CERTIFIED: [Certified]

Date: [Date]

AUTHORIZED RECEIVER: [Authorized Receiver]

Date: [Date]

CONTAINS HAZARDOUS MATERIALS

019260

EXP_000894
## LOAD/UNLOAD FORM

<table>
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<tr>
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<th>PRODUCT DESCRIPTION</th>
<th>FROM</th>
<th>TO</th>
<th>TRL#</th>
<th>LOT#</th>
<th>NUMBER OF TOTAL WEIGHTS</th>
<th>TOTAL WEIGHTS</th>
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</thead>
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<td>M-6</td>
<td>6L14</td>
<td>E&amp;Q</td>
<td>R71927</td>
<td>6X40</td>
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</tr>
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</table>

**TOTAL:** 35280

**SIGNATURE**

F. R. L.

PAPERWORK PREPARED BY:

Original Print Date: 10/30/2012
## STRAIGHT BILL OF LADING

**RECEIVED,** subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below.

- **Stated carrier** (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry the usual piece of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or railwater shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

**Shipper** hereby certifies that, he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff, which governs the transportation of the shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

### Details

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td><strong>Shipper</strong></td>
<td>Explo Systems, Inc.</td>
</tr>
<tr>
<td>1600 Java Road</td>
<td>Minden, LA 71055</td>
</tr>
<tr>
<td><strong>At</strong></td>
<td></td>
</tr>
<tr>
<td><strong>By</strong></td>
<td>Ruck</td>
</tr>
<tr>
<td><strong>Freight Charges</strong></td>
<td>Collect/Prepaid</td>
</tr>
<tr>
<td><strong>Location No.</strong></td>
<td>66214</td>
</tr>
<tr>
<td><strong>Shipping Date</strong></td>
<td>7-9-13</td>
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<tr>
<td><strong>Purchase Order No.</strong></td>
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</tr>
<tr>
<td><strong>Customer P.O. No.</strong></td>
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<tr>
<td><strong>Rel. No.</strong></td>
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<tr>
<td><strong>Consigned to</strong></td>
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</tr>
<tr>
<td><strong>Destination</strong></td>
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<td><strong>State</strong></td>
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<td><strong>County</strong></td>
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<tr>
<td><strong>Route</strong></td>
<td></td>
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<tr>
<td><strong>Charge Account of</strong></td>
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</tr>
<tr>
<td><strong>Customer No.</strong></td>
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</tr>
<tr>
<td><strong>Fed Lic.</strong></td>
<td>5-0K-097-20-UW-00458</td>
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<tr>
<td><strong>Exp. Date</strong></td>
<td>6/1/14</td>
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### Shipment Details

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<tr>
<td><strong>PROPER SHIPPING NAME AND HAZARD CLASS</strong></td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
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<tr>
<td><strong>EMERGENCY RESPONSE GUIDE NO.</strong></td>
<td>#112</td>
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<tr>
<td><strong>EXEMPTION</strong></td>
<td>EXPLOSIVES 1.3</td>
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<tr>
<td><strong>Placards Applied to Railcar or Motor Vehicle</strong></td>
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<tr>
<td><strong>UN No.</strong></td>
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<td><strong>Hazard Class</strong></td>
<td>1.3</td>
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<tr>
<td><strong>Cage No.</strong></td>
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</tr>
<tr>
<td><strong>Truck No.</strong></td>
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<tr>
<td><strong>Trailer No.</strong></td>
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<tr>
<td><strong>Mileage</strong></td>
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<tr>
<td><strong>Total Weight</strong></td>
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<tr>
<td><strong>Total Explosive Weight</strong></td>
<td>35,280</td>
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</tbody>
</table>

### Certification

**Signature:**

**Invoice No.:**

**For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident Call CHEMTREC — Day or Night**

**Local Federal Explosives License No.:**

**Permanent Address of Shipper:**

Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055

**Per:**

**DOT Hazardous Material Handling Number:**

**Local Federal Explosives License No.:**

**Shipper:**

**Received By:**

**Q CONSIGNEE**

**Q CARRIER**

**Authorized Receiver:**

**Date:**

**RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.**

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below.

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<td><strong>Destination</strong></td>
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<td><strong>EMERGENCY RESPONSE GUIDE NO.</strong></td>
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<td><strong>EXEMPTION</strong></td>
<td>EXPLOSIVES 1.3</td>
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<td><strong>Placards Applied to Railcar or Motor Vehicle</strong></td>
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<td><strong>Cage No.</strong></td>
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<td><strong>Truck No.</strong></td>
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<td><strong>Total Weight</strong></td>
<td>37,000</td>
</tr>
<tr>
<td><strong>Total Explosive Weight</strong></td>
<td>35,280</td>
</tr>
</tbody>
</table>

### Certification

**Signature:**

**Invoice No.:**

**For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident Call CHEMTREC — Day or Night**

**Local Federal Explosives License No.:**

**Permanent Address of Shipper:**

Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055

**Per:**

**DOT Hazardous Material Handling Number:**

**Local Federal Explosives License No.:**

**Shipper:**

**Received By:**

**Q CONSIGNEE**

**Q CARRIER**

**Authorized Receiver:**

**Date:**
<table>
<thead>
<tr>
<th>DATE</th>
<th>PRODUCT DESCRIPTION</th>
<th>FROM</th>
<th>TO</th>
<th>TRL#</th>
<th>LOT#</th>
<th>NUMBER OF</th>
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Signature: [Signature]

PAPERWORK PREPARED BY: [Signature]

Original Print Date: 10/30/2012
**STRAIGHT BILL OF LADING**

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below.

It is agreed that the person or corporation in possession of the property under the contract agrees to carry the usual place of delivery of said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to all parties at any time interested in all or any of said property, that every service or other performance hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

---

**Shipper:** Explo Systems, Inc.

1600 Java Road

Minden, LA 71055

**Freight Charges:** Collect

**Prepaid**

**Location No.:** 6LC114

---

<table>
<thead>
<tr>
<th>SHIPPED</th>
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<tr>
<td>No. of Pkgs</td>
<td>No. of Units</td>
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**SHIPPER'S BILL NO.:** 2934

**Shipping Date:** 7/9/13

**Purchase Order No.:**

**Location No.:** 6LC114

---

**Consigned to:**

**Fed Lic.:** 50K-09720-4F-00454

**Exp. Date:** 6/1/14

**State Lic.:**

**Customer No.:**

**Service Account of:** 1-405-832-125

**Customer P.O. No.:**

**Rel. No.:**

---

**SHIPPED**: UN0161, Powder, Smokeless, 1.3C, PG II

**RETURNED**

**Emergency Response Group No.:** #112

**EXEMPTION DOT**: 4 EXPLOSIVES 1.3

---

**Placards Applied to Railroad or Motor Vehicle**

**EXPO-000898**

---

**Mileage**

**Packages**

**Gross Weight**

**Net Explosive Weight**

---

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

---

**Signature:**

**Invoice No.:**

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT**

---

**Consignment Information**

**PerMITTED ADDRESS OF SHIPPER:**

**Explo Systems, Inc.**

**40 Java Road**

**En. Louisiana 71055**

**4382-8700**

---

**DOT Hazardous Material Handling Number**

**Local Federal Explosives License No. 5-LA-119-20-1A-00057**

---

**RECEIVED BY**

**Date:**

**AUTHORIZED RECEIVER**

---

**EXP_000898**

---

**CONTAINS HAZARDOUS MATERIALS**
<table>
<thead>
<tr>
<th>DATE RECEIVED/LOADED</th>
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<td>W&amp;L</td>
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<td>DATE</td>
<td>7-9-13</td>
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<tr>
<td>WEIGHTS</td>
<td>34</td>
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</tbody>
</table>
# Straight Bill of Lading

**Shipper:** Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055

**Freight Charges:** Collect  
Prepaid XXX  
Location No. 2305

**Consignee:**  
Fed. Lic. 5172-138-30-55  
Exp. Date 5/1/15

**Destination:**  
State  
Exp. Date  
Customer No.

**Charge Account of:**  
Customer P.O. No.

<table>
<thead>
<tr>
<th>SHIPPED No. of PROG</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PROG</th>
<th>RETURNED No. of UNITS</th>
<th>EXEMPTION CODE <em>SHIME</em></th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
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<td>EXPLOSIVES 1.3</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RECEIVED**  
11/26/12  
Load 1

**Shipped Weight:** 377.30  
**Percent:** 100

**Receive:**  
11/26/12  
AUSTIN POWDER COMPANY  
EAST CAMDEN PLANT

**This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.**

**Signature:**  
11/26/12

**FOR CHEMICAL EMERGENCY SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-9300 IN CANADA (ERP #00040) 800-561-3636 ELSEWHERE CALL (703) 577-3837 EXP_000900**

**I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.**

**Received By:**  
11/26/12  
M. Oteo L. Taylor  
AUTHORIZED RECEIVER

**Shipped Weight:** 377.30  
**Percent:** 100

**Permanent Address of Shipper:**  
Explo Systems, Inc.  
1600 Java Road  
Minden, Louisiana 71055  
(318) 382-8700

**Per:**

**Local Federal Explosives License No. 5-LA-119-20-1A-00057**

**Shipper's No.:** 2801

**Shipping Date:** 11/26/12

**Purchase Order No.:**

**Load:** 1

**Location No.:** 2305

**Not Negotiable**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 28 NOV 2012

B/L# 2801

M-6

IND87B-Y70678 3 PTS
IND87A-070677 2 PTS
IND84A-070323 10 PTS
IND86E-070617 2 PTS
IND82D-070113 1 PT
IND87D-070450 1 PT
IND82H-070168 6 PTS
IND82C-070018 2 PTS
IND83K-070319 2 PTS
IND82K-070175 4 PTS
IND83F-070278 2 PTS
IND83G-070281 1 PT

IND87L-070301 1 PT
IND84B-Y70325 1 PT
IND81E-070022 2 PTS
IND88J-070969 1 PT
IND85G-070592 1 PT
IND87L-070886 3 PTS

40 pallets x 6 = 240 drums
x 140 lbs

33,600 lbs

5 pallets x 6 = 30 drums
x 121 lbs

3630 lbs

45 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 37,800 LBS

LIONEL KOONS

EXPLO SYSTEMS INC

1 drum busted with prop on floor

Total 37230
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85G070592  
**D533 / M6 propellant**

**Date of analysis:** Date: 11 JULY 2012

**Sample Data**  
*Solvent*  
#1  
0.50 g  
100 ml  
ACN

**Standards (ERG-006)**  

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
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</thead>
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<td>Time</td>
<td>Area%</td>
<td>Area%</td>
<td>Area%</td>
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<td>546.9</td>
<td>1.693</td>
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<td>50.0</td>
<td>3.397</td>
<td>945.1</td>
<td>0</td>
<td>0.000</td>
</tr>
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<td>159.2</td>
<td>0.010</td>
</tr>
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<td>11.761</td>
<td>5473.7</td>
<td>133.8</td>
<td>0.010</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.606</td>
<td>1672.4</td>
<td>0</td>
<td>0.000</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot**  
1.721

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 1.72%

**Analyst Signature**  
**Stable** YES Unstable

**Lab. Supervisor Signature**  
**Comments** CATEGORY: A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87L070886  
**Date of analysis:** Date: 4 Sep 2012  
**Other Information:** M6 Propellant

### Sample Data

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample #</th>
<th>#1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

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<th>Conc. Ret</th>
<th>Intg.</th>
<th>ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
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<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 1.397

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.40%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**  
**Comments:**

**Lab. Supervisor Signature**  
**CATEGORY:** A  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88J070969  
**Date of analysis:**  
**D533 / M6 propellant**  
**Date:** 24 OCT 2012

### Other Information
- **Sample Data**
  - #1  
  - 0.50 g  
  - 100 ml  
- **Solvent**  
  - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area %</th>
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<tbody>
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<td>4,4'DNDPA</td>
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<td>75.0</td>
<td>11.732</td>
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</table>

### Sample #

- Avg. % Stabilizer for Lot: 0.564

### Results

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** MIKE KILE  
**Analyst Signature:**  
**Avg. Tot. Stabilizers:** 0.56%

### Comments

- Stable: YES  
- Unstable:  
- CATEGORY: A  
- Actions to be Taken:
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**Date of analysis:** 29 JUNE 2012  
**D533 / M6 propellant**

## Sample Data
- **Sample**: #1  
- **Weight**: 0.50 g  
- **Solvent Volume**: 100 ml  
- **Solvent**: ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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<td>4,4' DNDPA</td>
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<td>0.88</td>
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<td>11.092</td>
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**Avg. % Stabilizer for Lot:** 0.295

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Analyst Signature:** [Signature]

**Avg. Tot. Stabilizers:** 0.30%

**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84BY70325  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 4 AUGUST 2011

## Other Information
- Sample Data:  
  - #1: 0.50 g  
  - 100 ml ACN

M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
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<td>604.7</td>
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Avg. % Stabilizer for Lot: **0.298**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** 
TAKISHA DICKERSON

**Avg. Tot. Stabilizers** **0.30 %**

**Analyst Signature**
Stable **YES** Unstable

**Comments**  
CATEGORY: **A**

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**

**Date of analysis:** Date: 13 AUGUST 2012

**Sample Data**

<table>
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<tr>
<th>Sample</th>
<th>Retention TIME</th>
<th>Retention Area</th>
<th>Conc. (ppm)</th>
<th>Int. Area</th>
<th>Conc. %</th>
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<td>#1</td>
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<td>100 ml ACN</td>
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<td></td>
<td></td>
<td>N-NitrosoDPA</td>
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<td>1509.1</td>
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**Average % Stabilizer for Lot:** 0.549

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.55%

**Analyst Signature**

**Stable:** YES  
**Unstable:** No

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/10/2010  
EXP_000907
# HPLC PROPellant STABILITY REPORT

Lot Number: IND83F070278  |  D533 / M6 propellant
Date of analysis:        |  Date: 11 JULY 2012

## Other Information
- M6 Propellant

### Sample Data
- Solvent:
  - #1: 0.50 g  |  100 ml  |  ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
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<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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<td>50.0</td>
<td>0.803</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.397</td>
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<tr>
<td>2,2'DNDPA</td>
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<td>11.761</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.606</td>
<td>1672.4</td>
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**Avg. % Stabilizer for Lot:** 0.843

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- Takisha Dickerson

### Avg. Tot. Stabilizers
- 0.84%

### Analyst Signature
- Stable: YES | Unstable

### Lab. Supervisor Signature
- Comments: CATEGORY: A
- Actions to be Taken
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**D533 / M6 propellant**

**Date of analysis:** Date: 6 AUG 2010

### Other Information
- **Sample Data**
- **Solvent**
  - #1: 0.5000 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>ppm</td>
<td>Area 1</td>
</tr>
<tr>
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<td>50.0</td>
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<td>14.999</td>
<td>558.4</td>
<td>75.0</td>
<td>437</td>
</tr>
</tbody>
</table>

### Sample #

<table>
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<tr>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
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<td>0.000</td>
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<td>254.6</td>
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**Avg. % Stabilizer for Lot:** **1.465**

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

### Analyst
- **Mike Kile**

### Average Total Stabilizers
- 1.46 %

### Analyst Signature
- **Stable:** YES  
- Unstable  

### Comments
- CATEGORY:  

### Lab. Supervisor Signature
- Actions to be Taken

---

Form #158  
Original Print Date: 07/19/2010  
019275  
EXP_000909
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83K070319  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 15 JUNE 2012

**Other Information**  
**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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<td>7.435</td>
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<td>50.0</td>
<td>8.937</td>
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<td>159.8</td>
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<td>10.056</td>
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<td>11.627</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.44</td>
<td>1376.8</td>
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</tr>
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**Sample #**

**Intg. Area %**

- **0.694**

**Avg. % Stabilizer for Lot**

- **0.694**

- **0.30% or more is Stability Code A**
- **0.20% - 0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst**

- **Takisha Dickerson**

**Avg. Tot. Stabilizers**

- **0.69 %**

**Analyst Signature**

- **Stable**
- **YES**
- **Unstable**

**Comments**

- **CATEGORY:** **A**

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82C070018  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 FEB 2011

**Sample Data**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>#1</th>
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<th>100 ml</th>
<th>ACN</th>
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## Standards (ERG-006)

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<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
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<td></td>
<td>ppm</td>
<td>ppm</td>
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<td></td>
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<tr>
<td>4,4' DNPDPA</td>
<td>50.0</td>
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<td>1116</td>
<td>1700.7</td>
<td>0.152</td>
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<td></td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
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<td>1191.2</td>
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<tr>
<td>2,2' DNDPA</td>
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<td>1694.7</td>
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<td></td>
</tr>
<tr>
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<tr>
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<td>0.000</td>
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<tr>
<td>N-NitrosodPA</td>
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<td>18.932</td>
<td>2535.1</td>
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</table>

Avg. % Stabilizer for Lot: 2.338

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Mike Kile

**Avg. Tot. Stabilizers**  
2.34 %

**Analyst Signature**  
Stable YES | Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168

**D533 / M6 propellant**

**Date of analysis:**

**Date:** 1 FEB 2011

## Sample Data

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<tr>
<th>Sample</th>
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<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
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<tbody>
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<td>0.5000 g</td>
<td>100 ml</td>
<td>ACN</td>
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## Standards (ERG-006)

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<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
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<tbody>
<tr>
<td>4,4′ DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td></td>
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<tr>
<td>2,4-DNDPA</td>
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<td>9.388</td>
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<tr>
<td>2,2′ DNDPA</td>
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<td>10.987</td>
<td>1694.7</td>
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<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
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<td>4NDPA</td>
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<td>2NDPA</td>
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<td>5852.1</td>
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<td>DPA</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
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<table>
<thead>
<tr>
<th>Intg.</th>
<th>Conc.</th>
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<td>143.2</td>
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<td>0</td>
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<td>838.5</td>
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<tr>
<td>985.4</td>
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</table>

## Avg. % Stabilizer for Lot

2.875

0.30% or more is Stability Code A

0.20% - 0.29% is Stability Code C

Less than 0.20% is Stability Code D

## Analyst

**Mike Kile**

## Analyst Signature

## Avg. Tot. Stabilizers

2.88 %

## Stable

YES

## Unstable

## Comments

**CATEGORY:** A

## Actions to be Taken

---

Form #158

Original Print Date: 07/19/2010

EXP_000912
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070113  
**D533 / M6 propellant**

**Date of analysis:** Date: 6 JAN 2012

**Other Information:**
M6 Propellant

### Standards (ERG-006)

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<tbody>
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<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.336

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.34 %

**Analyst Signature**  
**Stable** YES Unstable

**Lab. Supervisor Signature**  
**Comments** CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070617  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 18 JULY 2012

## Other Information
- **Sample Data**
  - Solvent: ACN
  - Sample #1: 0.50 g, 100 ml

### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td>4,4' DNDA</td>
<td>50.0</td>
<td>0.863</td>
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<td>2,2' DNDA</td>
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<td>1395.6</td>
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<td>0.000</td>
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</tbody>
</table>

## Analyst
- **Takisha Dickerson**

### Avg. Tot. Stabilizers
- **0.35 %**

### Comments
- **CATEGORY:** A

### Actions to be Taken

---

**Form #158**  
019280  
**Original Print Date:** 07/19/2010  
**EXP_000914**
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND84A070323  |  D533 / M6 propellant
---|---
Date of analysis: | Date: 21 DEC 2011

**Other Information**

- Sample Data
  - Sample #1: 0.50 g, 100 ml, ACN

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>50.0</td>
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<td>11.073</td>
<td>1512.2</td>
<td>0</td>
<td>0.000</td>
</tr>
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</table>

- Avg. % Stabilizer for Lot: 0.402

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON

**Avg. Tot. Stabilizers**: 0.40%

**Analyst Signature**

**Stable** YES **Unstable**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY**: A

**Actions to be Taken**

---

Form #158

Original Print Date: 07/10/2010

EXP_000915
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87A070677  
**D533 / M6 propellant**

**Date of analysis:** 23 AUG 2010

### Other Information

- **Sample Data**
  - #1: 0.5000 g  
  - 100 ml  
  - ACN

### Standards (ERG-006) Sample #

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
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<th>Conc. %</th>
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<td>0</td>
<td>0.000</td>
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<tr>
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<td>200.0</td>
<td>13.934</td>
<td>4151.3</td>
<td>171.4</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.563

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

- **Kisha Dickerson**

### Analyst Signature

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Actions to be Taken**

---

*Form #159  
Original Print Date: 07/40/2016  
EXP_000916*
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND87BY70678  D533 / M6 propellant
Date of analysis: Date: 19 OCTOBER 2011

Other Information
M6 Propellant

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<tr>
<th>Sample Data</th>
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<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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<tbody>
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<td>Conc. ppm</td>
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<td>2,2' DNDPA</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot 0.463

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst TAKISHA DICKERSON

Avg. Tot. Stabilizers 0.46 %

Analyst Signature

Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is agreed, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (6) in Uniform Freight Classification in effect on the date hereof.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Expio Systems, Inc.
1600 Java Road
Minden, LA 71055

Freight Charges: Collect
Prepaid

Shipper’s No.: 2802
Shipping Date: 11/19/19
Purchase Order No.
Location No.: 2803

Consigned to

Fed Lic.
Exp. Date

State Lic.
Exp. Date

Customer No.

Charge Account of

Customer P.O. No.
Rel. No.

SAN FRANCISCO, CA

Mail or Street Address of Consignee — For purposes of notification only

(Mailing Address)

Destination

State

County

Route

Charge Account

Customer P.O. No.
Rel. No.

SHIPPED
No. of
PACKS

PROPER SHIPPING NAME
AND HAZARD CLASS
UN0161, Powder, Smokeless, 1.3C, PG II

SHIPPED
No. of
UNITS

RECOMMENDED
No. of
PACKS

RECOMMENDED
No. of
UNITS

EMERGENCY
RESPONSE
PROCEDURE
GUIDE NO.

EXEMPTION
DOT-E
H
M

Placards Applied to Railcar or
Motor Vehicle
EXPLOSIVES 1.3

RECEIVED

NOV 29 2019

AUSTIN POWDER COMPANY
EAST CAMDEN PLANT

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300
IN CANADA (ERP #2-0040) 800-561-3636
ELSEWHERE CALL (703) 527-3889

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

Date

CONSIGNEE

CARRIER

By

AUTHORIZED RECEIVER

Permanent Address of Shipper:
Expio Systems, Inc.
1600 Java Road
Minden, Louisiana 71055
(318) 382-6700

Per

D.O.T. Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057
(Shippers)

CONTAINS HAZARDOUS MATERIALS

019284

EXP_000918
LOAD 2

35.6 x 140 = 29,440 lbs
10.6 x 121 = 7,126 lbs

Total 36,566 lbs

45 Pts with 6 FB @ 140 lbs per drum

TOTAL 37,800 LBS

LIONEL KOONS

EXPO SYSTEMS INC

Drum Busted Product on Floor
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84BY70325  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 AUGUST 2011

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
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## Standards (ERG-006)

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<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret ppm</th>
<th>Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
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<td>50.0</td>
<td>0.633</td>
<td>245.7</td>
<td>604.7</td>
<td>0.246</td>
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<td>DPA</td>
<td>200.0</td>
<td>12.197</td>
<td>5674.1</td>
<td>602.8</td>
<td>0.042</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.097</td>
<td>1505.3</td>
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<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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Avg. % Stabilizer for Lot  

0.288

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.30 %

**Analyst Signature**

Stable  YES  Unstable

**Comments**

CATEGORY:  

A

**Lab. Supervisor Signature**

Actions to be Taken

---

Form #158  
019286  
07/19/2011  
EXP_000920
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87L070886  
**Date of analysis:** 4 Sep 2012

**Other Information**
- M6 Propellant
- Sample Data
  - Solvent: #1, 0.50 g, 100 ml, ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>657.1</td>
<td>1.347</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
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<td>0.000</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>23257</td>
<td>0.000</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>126.9</td>
<td>0.004</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>558.2</td>
<td>0.039</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td>0</td>
<td>0.000</td>
</tr>
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**Avg. % Stabilizer for Lot:** 1.397

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Mike Kile  
**Avg. Tot. Stabilizers:** 1.40%

**Analyst Signature**
**Stable** YES **Unstable**

**Comments**
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82C070018  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Sample Data**  
<table>
<thead>
<tr>
<th>Solvent</th>
<th>#1</th>
<th>0.5000 g</th>
<th>100 ml</th>
<th>ACN</th>
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</thead>
</table>

## Standards (ERG-006)  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
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</thead>
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<td>4.156</td>
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<td>1700.7</td>
<td>0.152</td>
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<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>25833.5</td>
<td>2.169</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>39.1</td>
<td>0.000</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
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<td>0.009</td>
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<td>15.022</td>
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<td>18.932</td>
<td>2535.1</td>
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<td>0.000</td>
</tr>
</tbody>
</table>

**0.30% or more is Stability Code A**  
**0.20% -0.29% is Stability Code C**  
**Less than 0.20% is Stability Code D**

**Analyst:** Mike Kile  
**Analyst Signature:**  
**Avg. Tot. Stabilizers:** 2.34 %  
**Stable:** YES  
**Unstable:**  
**Comments:** CATEGORY: A  
**Actions to be Taken:**
**HPLC PROPELLANT STABILITY REPORT**

Lot Number: IND85G070592

<table>
<thead>
<tr>
<th>Date of analysis:</th>
<th>D533 / M6 propellant</th>
</tr>
</thead>
</table>

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
</tbody>
</table>

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tbody>
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<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Area</td>
<td>Area %</td>
<td></td>
</tr>
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<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.1</td>
<td>114.5</td>
<td>0.000</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>4.911</td>
<td>913.975</td>
<td>1063.1</td>
<td>0.116</td>
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<td>50.0</td>
<td>6.723</td>
<td>539.15</td>
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<td>0.000</td>
</tr>
<tr>
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<td>50.0</td>
<td>9.111</td>
<td>1198.55</td>
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<td>75.0</td>
<td>13.888</td>
<td>3100.4</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

| Avg. % Stabilizer for Lot | 0.883 |

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst** MARTY

**Avg. Tot. Stabilizers** 0.88 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

| CATEGORY: | A |

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88J070969  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 24 OCT 2012

### Other Information
- **Sample Data:** #1  
  - **Solvent:** 100 ml ACN  
  - **Sample:** 0.50 g
- **M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
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<tbody>
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<td>0.784</td>
<td>163</td>
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<td>776.6</td>
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**Avg. % Stabilizer for Lot:** 0.564

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
- **MIKE KILE**

### Analyst Signature

### Avg. Tot. Stabilizers

**0.56 %**

### Lab. Supervisor Signature

### Comments

**CATEGORY:** A

### Actions to be Taken

**Stable:** YES  
**Unstable:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070617  
**D533 / M6 propellant**

**Date of analysis:**  
**Sample Data**  
**Solvent**  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
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<td>2,4' DNDPA</td>
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<td>7.514</td>
<td>1047.9</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
<td>1698.8</td>
<td>45.3</td>
<td>0.003</td>
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<td>2NDPA</td>
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<td>10.142</td>
<td>3039.5</td>
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<td>0.003</td>
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<td>200.0</td>
<td>11.585</td>
<td>6044.7</td>
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<td>12.4</td>
<td>1395.6</td>
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<td>0.000</td>
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**Avg. % Stabilizer for Lot**  
0.353

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Takisha Dickerson**

**Analyst Signature**

**Avg. Tot. Stabilizers**  
0.35 %

**Lab. Supervisor Signature**

**Stable** | **YES** | **Unstable**

**Comments**  
**CATEGORY:**  
A

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND83G070281

D533 / M6 propellant

Date of analysis: Date: 4 April 2012

Other Information

M6 Propellant

Sample Data

#1 0.50 g 100 ml ACN

Solvent

Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</table>

Avg. % Stabilizer for Lot 0.312

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst Takisha Dickerson

Avg. Tot. Stabilizers 0.31 %

Analyst Signature

Stable YES Unstable

Comments CATEGORY: A

Actions to be Taken

EXP_000926
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 17 Feb 2012

**Other Information**  
**Sample Data:**  
**Solvent:**  
#1 0.50 g 100 ml ACN

## Standards (ERG-006)

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<td>Area 1</td>
<td>ppm</td>
<td>Area</td>
<td>%</td>
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**Avg. % Stabilizer for Lot:** 0.631

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.63 %

**Analyst Signature**  
**Stable:** YES  
**Unstable**:

**Lab. Supervisor Signature**  
**Comments**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND082H070168  
**Date of analysis:** D533 / M6 propellant  
**Date:** 1 FEB 2011

## Other Information

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<th>Sample Data</th>
<th>Solvent</th>
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<td>#1</td>
<td>0.5000 g 100 ml ACN</td>
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</tbody>
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## Standards (ERG-008)

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<td>Time</td>
<td>Area 1</td>
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<td>%</td>
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<td>1116</td>
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<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
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### Average % Stabilizer for Lot
2.875

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

- **Mike Kile**

## Analyst Signature

- **Stable**
- **YES**
- **Unstable**

## Lab. Supervisor Signature

- **Comments**
- **CATEGORY:** A

## Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82A070101  
**D533 / M6 propellant**

**Date of analysis:**  
**Solvent**

| Sample Data | Date: 28 June 2012 | No. | 0.50 g | 100 ml | ACN |

## Other Information

- **M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret Time Intg. Time</th>
<th>Intg. Ret Time</th>
<th>Area 1</th>
<th>Intg. Time</th>
<th>Area 1</th>
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<td>4,4'DNDA</td>
<td>500</td>
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<td>500</td>
<td>3.347</td>
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<td>0.003</td>
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<td>776.8</td>
<td>0.000</td>
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## Average % Stabilizer for Lot

- **0.693**

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

## Analyst

- **Takisha Dickerson**

## Analyst Signature

- Stable: **YES**  
- Unstable: **Unstable**

## Comments

- CATEGORY: **A**

## Actions to be Taken
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 AUG 2010

### Other Information
- **Sample Data**
- **Solvent**
  - #1 0.5000 g  
  - 100 ml ACN

### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret.</th>
<th>Intg.</th>
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<th>Sample #</th>
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<td>2,4-DNDPA</td>
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<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>45.7</td>
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</tr>
</tbody>
</table>

### Results

| Avg. % Stabilizer for Lot | 0.651 |

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
0.65 %

**Stable**  
YES  
**Unstable**

**Comments**  
CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 21 DEC 2011

**Other Information**  
Sample Data: #1  
Solvent: 0.50 g  
100 ml ACN

## Standards (ERG-008)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
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Avg. % Stabilizer for Lot: 0.402

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.40%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 29 JUNE 2012

**Other Information**  
M6 Propellant

**Sample Data**  
Sample #1:  
- Mass: 0.50 g  
- Volume: 100 ml  
- Solvent: ACN

## Standards (ERG-006)

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**Avg. % Stabilizer for Lot:** 0.295

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.30 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination, it on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all of any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth in Uniform Freight Classification in effect on the date hereof, it this is a rail or motor shipment, or in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By R/P LJR

Freight Charges: Collect
Prepaid
Location No.

Shipping Date 11/29/12
Purchase Order No.

Consignee: AUSTIN POWDER CO
Fed Lic. Exp. Date
State Lic.
Exp. Date

County Customer No.

Route 1670 S 146 55-80 06 502
Charge Account of Customer P.O. No.
Rel. No.

SHIPPED No. of PKGS PROPER SHIPPING NAME AND HAZARD CLASS RETURNED No. of PKGS EXEMPTION (OFF-FEE) HM Placards Applied to Railroad or Motor Vehicle

| 20/0* | UN0161, Powder, Smokeless, 1.3C, PG II | #112 | EXPLOSIVES 1.3 |

Received 11-29-12

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300
IN CANADA (ERP # 28040) 800-561-3838
ELSEWHERE CALL (703) 527-3887

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055
(318) 383-8700

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

Q CONSIGNEE Q CARRIER

DOT Hazards Material Handling Number

Local Federal Explosives License No. 5-LA-119-201-A-00057

(Shipper)

019299

EXP_000933
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 29 NOV 2012

B/L# 2805 266

M-6

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45PTS WITH 5 FB @140 LBS PER DRUM

TOTAL 37,800 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC Propellant Stability Report

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:** 23 AUG 2010

**Sample Data**  
**Sample #**  
1. **Solvent**
   - **ACN**
   - **0.5000 g**
   - **100 ml**

## Standards (ERG-006)  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg Area 1</th>
<th>Intg Area</th>
<th>Conc %</th>
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<td>4.884</td>
<td>715.1</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
<td>5124.3</td>
<td>0.645</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>11.213</td>
<td>1155.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.899</td>
<td>750.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.536</td>
<td>1565</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>13.934</td>
<td>4151.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>46.7</td>
<td>0.006</td>
</tr>
</tbody>
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**Avg. % Stabilizer for Lot:** 0.651

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Average Tot Stabilizers:** 0.65%

**Stable:** YES | Unstable

**Comments:** CATEGORY: A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88J070969  
**D533 / M6 propellant**

### Date of analysis:
**Date:** 24 OCT 2012

### Other Information
- **Sample Data**
  - Solvent: ACN
  - Sample #1: 0.50 g, 100 ml

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.784</td>
<td>163</td>
<td>776.6</td>
<td>0.476</td>
</tr>
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<td>2,4-DNDPA</td>
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<td>0.000</td>
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<tr>
<td>2,2’ DNDPA</td>
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<td>2591.5</td>
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<td>0.000</td>
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#### Avg. % Stabilizer for Lot
0.564

- **0.30% or more is Stability Code A**
- **0.20% -0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

### Analyst
**MIKE KILE**

### Avg. Tot. Stabilizers
**0.56 %**

### Analyst Signature
Signed

### Comments
**CATEGORY:** A

### Lab. Supervisor Signature
Signed

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:**  
**Solvent**

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<thead>
<tr>
<th>Sample Data</th>
<th>#1</th>
<th>0.5000 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

**Other Information**

<table>
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</thead>
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**Standards (ERG-006)**

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<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.899</td>
<td>750.7</td>
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<td>0.000</td>
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</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.536</td>
<td>1565</td>
<td>0</td>
<td>0.000</td>
<td>0.000</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>13.934</td>
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<td>1080.5</td>
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<td></td>
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</tr>
</tbody>
</table>

**Average % Stabilizer for Lot:** 2.237

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.24 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  |  **D533 / M6 propellant**  
**Date of analysis:**  |  **Date:** 21 DEC 2011  
**Sample Data**  |  **Solvent**  
#1 | 0.50 g | 100 ml | ACN  

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. %</th>
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</thead>
<tbody>
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<td>1512.2</td>
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**Avg. % Stabilizer for Lot:** 0.402

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

**TAKISHA DICKERSON**

**Avg. Tot. Stabilizers:** 0.40 %

**Status:** Stable

**Comments:**

**CATEGORY:** A

**Actions to be Taken:**

---

Form #158  
019304  
**Original Print Date:** 07/19/2010

EXP_000938
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85B070507  |  **D533 / M6 propellant**  
**Date of analysis:**  |  **Date:** 16 JULY 2012  

### Other Information
- **Sample Data:** #1  
  - **Solvent:** 100 ml ACN  
  - **Sample:** 0.50 g  

### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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</table>

**Avg. % Stabilizer for Lot:** 0.686

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
- **Takisha Dickerson**  
- **Avg. Tot. Stabilizers:** 0.69 %

### Analyst Signature

### Lab. Supervisor Signature

### Comments
- **CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85KY70598  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Sample Data:**  
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<th>Sample</th>
<th>Solvent</th>
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<tbody>
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<td>ACN</td>
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## Standards (ERG-006)  

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<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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## Avg. % Stabilizer for Lot  
0.334

- 0.30% or more is Stability Code A  
- 0.20% -0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

**Analyst:** KISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.33 %  
**Analyst Signature:**  
**Stable:** YES  
**Unstable:** **Comments:** CATEGORY: A  
**Lab. Supervisor Signature:**  
**Actions to be Taken:**
## STRAIGHT BILL OF LADING

**RECEIVED,** subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its ultimate place of delivery at said destination, it or on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property, over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service (acts performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-road shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055

**At**

**By** SCLW  
Freight Charges: Collect  
Prepaid Y Y Y  
Location No. 2223

**Shipper's No.** 2807

**Shipping Date** 11/29/11

**Purchase Order No.**

**Consignee:**  
**Destination:**  
**State:**  
**County:** East Camden  
**Route:** 1-800-574-8808  
**Charge Account of:**

**Customer P.O. No.**

**Rel. No.**

<table>
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<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PROS</th>
<th>RETURNED No. of UNITS</th>
<th>EMERGENCY RESPONSE PROCEDURE GUIDE NO.</th>
<th>EXEMPTION DOT-4E</th>
<th>H M</th>
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<td></td>
<td>Net Explosive Weight 3936</td>
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</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Signature**

**Invoice No.**

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CENTRC — DAY OR NIGHT**

IN THE USA CALL 800-424-6300  IN CANADA (ERP 2-0040) 800-581-3636  ELSEWHERE CALL (703) 327-3887

**Permanent Address of Shipper:**  
Explo Systems, Inc. 1600 Java Road  
Minden, Louisiana 71055  
(318) 395-8700

**DOT Hazardous Material Handling Number**

**Local Federal Explosives License No.** 5-LA-119-20-1A-00057  
(Shippers)

I have been offered placards identifying the shipment as Specified in 49 CFR Subpart F of Part 172. I have received the above and agree to maintain said placard in good order and condition.

**Signature**

**Date**

**Received By**  
**Consignee** Q  
**Carrier** Q  
**Authorized Receiver**

**Date**

**019307**

**EXP_000941**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 29 NOV 2012

B/L# 2804 2807

M-6

IND88J-070969 2 PTS
IND86H-070622 16 PTS
IND81E-070022 8 PTS
IND84A-070323 4 PTS
IND84B-70325 4 PTS
IND84K-070597 1 PT
IND858-070507 5 PTS
IND87D-070450 1 PT
IND87A-070677 1 PT
IND87L-070886 1 PT
IND85L-070599 1 PT

44PTS With 6FD @ 140 LBS PER DRUM
1PT With 6FD @ 121 LBS PER DRUM
TOTAL WT.: 37.686 LBS

LIONEL KOONS
EXPLO SYSTEMS INC

4 people 1 Hr OT This load

Mindy
Evan
Robert
Courtney Ryan
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND88J070969  D533 / M6 propellant
Date of analysis:  Date: 24 OCT 2012

Other Information
M6 Propellant

Sample Data
Sample #  Solvent
#1  0.50 g  100 ml  ACN

Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area %</th>
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<td>ppm</td>
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</tr>
<tr>
<td>4,4' DNDPA</td>
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<td>0.784</td>
<td>163</td>
<td>776.6</td>
<td>0.476</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.299</td>
<td>808.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.947</td>
<td>2591.5</td>
<td>24054</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
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</table>

Avg. % Stabilizer for Lot 0.564

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst MIKE KILE
Analyst Signature

Avg. Tot. Stabilizers 0.56 %
Stable YES Unstable
Comments CATEGORY: A

Lab. Supervisor Signature
Actions to be Taken
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  
**Date of analysis:** 21 DEC 2011  
**Sample Data:** #1  
**Solvent:** ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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**Avg. % Stabilizer for Lot:** 0.402

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

**TAKISHA DICKERSON**  
**Avg. Tot. Stabilizers:** 0.40%

### Analyst Signature

**Stable:** YES  
**Unstable:**

### Lab. Supervisor Signature

**Comments:** CATEGORY: A  
**Actions to be Taken:**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND84BY70325  D533 / M6 propellant
Date of analysis:  Date: 4 AUGUST 2011

Other Information
Sample Data  Solvent
#1  0.50 g  100 ml ACN
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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</thead>
</table>

<table>
<thead>
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<th></th>
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<td>Time</td>
<td>Area 1</td>
<td>Area</td>
<td>Area</td>
<td>%</td>
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0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Avg. % Stabilizer for Lot 0.298

Analyst  TAKISHA DICKERSON  Avg. Tot. Stabilizers 0.30 %
Analyst Signature

Stable YES Unstable

Comments

CATEGORY: A

Actions to be Taken

**HPLC PROPELLANT STABILITY REPORT**

Lot Number: IND85B070507  
D533 / M6 propellant

Date of analysis:  
Date: 16 JULY 2012

### Sample Data

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<thead>
<tr>
<th>Solvent</th>
<th>#1</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
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### Standards (ERG-006)

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<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>2,4-DNDPA</td>
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**Avg. % Stabilizer for Lot:** 0.686

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.69%

**Analyst Signature**  

**Stable**  
YES

**Unstable**

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87A070677  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

## Other Information

- **Sample Data**
  - #1: 0.5000 g, 100 ml, ACN

## Sample #

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<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg.</th>
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<th>Area %</th>
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</thead>
<tbody>
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<tr>
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</tr>
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<td>2,2’ DNDPA</td>
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<td>0.000</td>
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<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>11.213</td>
<td>1155.8</td>
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<td>0.000</td>
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<tr>
<td>4NDPA</td>
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<td>11.899</td>
<td>750.7</td>
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<tr>
<td>2NDPA</td>
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<td>12.536</td>
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<tr>
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<td>13.934</td>
<td>4151.3</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>171.4</td>
<td>0.024</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot**  
**0.563**

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
**0.56 %**

**Analyst Signature**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND87L070886  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 Sep 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
<tr>
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## M6 Propellant Standards (ERG-006)

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<td>2826.3</td>
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Avg. % Stabilizer for Lot: **1.397**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** **1.40 %**

**Analyst Signature**

**Stable** YES | Unstable

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
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<td>2,4’ DNDPA</td>
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<tr>
<td>DPA</td>
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<td>0 13.934</td>
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<td>N-NitrosoDPA</td>
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<td>0 14.875</td>
<td>1080.5</td>
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Avg. % Stabilizer for Lot: **0.651**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**: Kisha Dickerson  
**Avg. Tot. Stabilizers**: **0.65 %**  
**Analyst Signature**: Stable YES Unstable  
**Comments**: CATEGORY: A

**Lab. Supervisor Signature**: Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

**Information**  
**Sample Data**  
**Solvent**

- **#1**  
- **0.5000 g**  
- **100 ml**  
- **ACN**

### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
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**Avg. % Stabilizer for Lot:** 2.237

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.24 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, apparent good order, except as noted (content and condition of contents of packages unknown) consigned, end destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination, it on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (i) in Uniform Freight Classification in effect on the date hereof, If this is a rail, motor or water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

<table>
<thead>
<tr>
<th>Shipper: Explo Systems, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 Java Road</td>
</tr>
<tr>
<td>Minden, LA 71055</td>
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<table>
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</tr>
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<table>
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| Freight Charges: Collect       |
| Prepaid                        |

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<table>
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<table>
<thead>
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<th>Purchase Order No.</th>
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| (Mail or Street Address of Consignee — For purposes of notification only) |
| Fed Lic.                      |
| State                        |
| Customer No.                 |

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| Charge Account of             |
| Customer P.O. No.             |

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<th>Rel. No.</th>
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| TOTAL SHIPPED No. of PKGS  |
| TOTAL SHIPPED No. of UNITS  |

| UN0161, Powder, Smokeless, 1.3C, PG II |

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<tr>
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<th>RETURNED No. of UNITS</th>
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<th>M</th>
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<tbody>
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</tr>
<tr>
<td>Total Packages</td>
<td>50</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>40,000</td>
</tr>
<tr>
<td>Net Explosive Weight</td>
<td>37.3</td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Invoice No.</th>
</tr>
</thead>
</table>

| Permanent Address of Shipper: |
| Explo Systems, Inc. |
| 1600 Java Road |
| Minden, Louisiana 71055 |
| (318) 362-8700 |

<table>
<thead>
<tr>
<th>DOT Hazardous Material Handling Number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Federal Explosives License No. 5-LA-119-20-1A-00057</td>
<td>(Shipper)</td>
</tr>
</tbody>
</table>

I have been offered placards identifying the shipment as Specified in 49 CFR Part 172. I have received the above goods in apparent good order and condition.

<table>
<thead>
<tr>
<th>Received By</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSIGNEE</td>
<td>CARRIER</td>
</tr>
<tr>
<td>By</td>
<td>AUTHORIZED RECEIVER</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>11/29/12</th>
</tr>
</thead>
</table>

EXP_000951
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 29 NOV 2012

B/L# 2806

M-6

IND82H-070168 1 PT
IND83F-070278 1 PT
IND87D-070450 4 PTS
IND85B-070507 4 PTS
IND86E-070617 1 PT
IND84A-070323 3 PTS
IND81E-070022 11 PTS
IND87C-070886 2 PTS
IND85G-070592 1 PT
IND83L-070320 1 PT
IND84B-070325 7 PTS
IND85K-070598 1 PT
IND84B-070325 2 PTS
IND86H-070711 2 PTS
IND88J-070969 1 PT
IND85B-070508 1 PT
IND86H-070622 2 PT

40PTS WITH 6 FB @140 LBS PER DRUM

5 PTS WITH 6 FB @ 121 LBS PER DRUM

TOTAL 37,230 LBS

LIONEL KOONS

EXPL O SYSTEMS INC

4 people 3 hrs OT This load

Mindy
Even
Courtney Rogers
Robert.
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**  
**Date of analysis:** Date: 23 AUG 2010  
**Other Information**  
M6 Propellant  
Sample Data  
Solvent  
#1  0.5000 g  100 ml  ACN

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg Area 1</th>
<th>Intg Area</th>
<th>Conc %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.884</td>
<td>715.1</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
<td>17278.9</td>
<td>2.174</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
<td>17278.9</td>
<td>2.174</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>11.213</td>
<td>1155.8</td>
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<td>0.000</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>11.899</td>
<td>750.7</td>
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<td>0.000</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.536</td>
<td>1565</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>13.934</td>
<td>4151.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>451.1</td>
<td>0.063</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: **2.237**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Analyst Signature:** Stable  
**Avg. Tot. Stabilizers:** **2.24 %**  
**Unstable**  
**Comments:** CATEGORY: **A**  
**Lab. Supervisor Signature:**  
**Actions to be Taken:**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168

**Date of analysis:**

**D533 / M6 propellant**

**Other Information**

- **Sample Data:**
  - **Solvent:** ACN
  - **Sample #1:** 0.5000 g, 100 ml

**M6 Propellant Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>2540.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>31231.4</td>
</tr>
<tr>
<td>2,2’DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>51.5</td>
</tr>
<tr>
<td>2,4’DNDPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>143.2</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
<td>0</td>
</tr>
<tr>
<td>2NITRODPA</td>
<td>50.0</td>
<td>13.939</td>
<td>5852.1</td>
<td>838.5</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
<td>0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>985.4</td>
</tr>
</tbody>
</table>

**Average % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile

**Avg. Tot. Stabilizers:** 2.88 %

**Analyst Signature:**

**Stable:** YES

**Unstable:**

**Comments:**

- **CATEGORY:** A

**Lab. Supervisor Signature:**

**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**Sample Data:**  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 11 JULY 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Intg.</td>
</tr>
<tr>
<td>ppm</td>
<td>Conc.</td>
</tr>
<tr>
<td>Ret Time Area 1 Area</td>
<td>%</td>
</tr>
</tbody>
</table>

| 4,4’ DNDPA | 50.0 | 0.803 | 32.3 | 256.2 | 0.793 |
| 2,4-DNDPA  | 50.0 | 3.397 | 945.1| 0     | 0.000 |
| 2,2’ DNDPA | 50.0 | 5.155 | 1995.1| 21574 | 0.000 |
| 2,4’ DNDPA | 50.0 | 7.525 | 949.2| 0     | 0.000 |
| 4NDPA      | 50.0 | 9.04  | 1580.4| 89.7  | 0.006 |
| 2NDPA      | 50.0 | 10.278| 2854 | 35.4  | 0.001 |
| DPA        | 200.0| 11.761| 5473.7| 589.5 | 0.043 |
| N-NitrosoDPA| 75.0| 12.606| 1672.4| 0     | 0.000 |

**Avg. % Stabilizer for Lot:** 0.843

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Assay:** 0.84 %

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 21 DEC 2011

## Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Solvent</th>
<th>#1</th>
<th>g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.50</td>
<td>g</td>
<td>0.50</td>
<td>0.50</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.67</td>
<td>192.9</td>
<td></td>
<td>675.2</td>
<td>0.350</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.298</td>
<td>1077.6</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>4.953</td>
<td>951.5</td>
<td></td>
<td>22469</td>
<td>0.000</td>
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</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>6.749</td>
<td>1366.2</td>
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<td>0</td>
<td>0.000</td>
<td></td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.218</td>
<td>1880.4</td>
<td></td>
<td>46.5</td>
<td>0.002</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.339</td>
<td>3292.9</td>
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<td>89.5</td>
<td>0.003</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.48</td>
<td>6310.2</td>
<td></td>
<td>733.6</td>
<td>0.047</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.073</td>
<td>1512.2</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.402

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**TAKISHA DICKERSON**

**Avg. Tot. Stabilizers:** 0.40 %

**Analyst Signature**

**Stable**: YES  
**Unstable**

**Comments**: CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_000956
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84BY70325  
**D533 / M6 propellant**

**Date of analysis:** Date: 4 AUGUST 2011

### Other Information
- **Sample Data**: 
  - Sample #1: 0.50 g, 100 ml, ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.633</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.489</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.345</td>
</tr>
<tr>
<td>2,4' DNPDA</td>
<td>50.0</td>
<td>7.825</td>
</tr>
<tr>
<td>4DPA</td>
<td>50.0</td>
<td>9.38</td>
</tr>
<tr>
<td>2DPA</td>
<td>50.0</td>
<td>10.682</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.197</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.097</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>604.7</td>
<td>0.246</td>
</tr>
<tr>
<td>23839</td>
<td>0.000</td>
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<tr>
<td>602.8</td>
<td>0.042</td>
</tr>
<tr>
<td>82.3</td>
<td>0.005</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

0.298

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
- **TAKISHA DICKERSON**
  - **Avg. Tot. Stabilizers**: 0.30 %
- **Stable**: YES  
  - **Unstable**
- **Comments**: CATEGORY: A

### Actions to be Taken
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85G070592  
**Date of analysis:** Date: 11 JULY 2012  
**Other Information:** Sample Data  

<table>
<thead>
<tr>
<th>Solvent</th>
<th>#1</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

#### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
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<td>50.0</td>
<td>0.803</td>
<td>32.3</td>
<td>546.9</td>
<td>1.693</td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.397</td>
<td>945.1</td>
<td>0</td>
<td>0.000</td>
<td></td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.155</td>
<td>1996.1</td>
<td>23089</td>
<td>0.000</td>
<td></td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.525</td>
<td>949.2</td>
<td>24.1</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.04</td>
<td>1580.4</td>
<td>159.2</td>
<td>0.010</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.278</td>
<td>2854</td>
<td>160.7</td>
<td>0.006</td>
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</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.761</td>
<td>5473.7</td>
<td>133.8</td>
<td>0.010</td>
<td></td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.606</td>
<td>1672.4</td>
<td>0</td>
<td>0.000</td>
<td></td>
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</tbody>
</table>

#### Analyst

**Analyst:** Takisha Dickerson  
**Signature:**  
**Avg. Tot. Stabilizers:** 1.72 %

#### Analyst Comments

- Stable: YES  
- Unstable:  

**Comments:** CATEGORY: A  
**Actions to be Taken:**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85B070507  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 16 JULY 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
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</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'DNDPA</td>
<td>50.0</td>
<td>0.871</td>
<td>70.8</td>
<td>459.1</td>
<td>0.650</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.368</td>
<td>934.1</td>
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<td>0.000</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.103</td>
<td>1888.8</td>
<td>22961</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.516</td>
<td>1021.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.938</td>
<td>1656.1</td>
<td>138.9</td>
<td>0.008</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.131</td>
<td>2970.1</td>
<td>109.4</td>
<td>0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.561</td>
<td>5887.3</td>
<td>342.8</td>
<td>0.023</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.367</td>
<td>1376.5</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

0.686

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
0.69 %

**Analyst Signature**  
[Signature]

**Comments**

- Stable: YES
- Unstable: NO

**Lab. Supervisor Signature**

**Actions to be Taken**

[Signature]

**CATEGORY:** A

Form #158  
019325

Original Print Date: 07/19/2010

EXP_000959
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85K070598  
**Date of analysis:**  
**Other Information:**  
**M6 Propellant**  
**Sample Data:**  
<table>
<thead>
<tr>
<th>Solvent</th>
<th>#1</th>
<th>0.5000 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>1423.9</td>
</tr>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14670.5</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
<td>0.000</td>
</tr>
<tr>
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<tr>
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<td>14.19</td>
<td>4886.9</td>
<td>403.2</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1298.7</td>
<td>0.000</td>
</tr>
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</table>

Avg. % Stabilizer for Lot: 1.005

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.00 %

**Analyst Signature**  
**Stable** YES Unstable

**Lab. Supervisor Signature**  
**Comments** CATEGORY: A

**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070617  
**D533 / M6 propellant**

**Date of analysis:** Date: 18 JULY 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
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<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
</tr>
<tr>
<td>0.50 g</td>
<td>100 ml</td>
</tr>
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</table>

#### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg. ppm</th>
<th>Concentration</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
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<td>133.9</td>
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<td>389.2</td>
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<td>50.0</td>
<td>3.365</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.091</td>
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<tr>
<td>2,4' DNDPA</td>
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<td>7.514</td>
<td>1047.9</td>
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<td>0</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
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<td>45.3</td>
<td>0.003</td>
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<td>0.003</td>
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**Avg. % Stabilizer for Lot:** 0.353

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.35 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:** 23 AUG 2010

**Other Information:**
- Sample Data: 
  - Sample #1: 0.5000 g, 100 ml, ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>% Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>4.884</td>
<td>715.1</td>
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<td>0.000</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
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<td>2,2’ DNDPA</td>
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Avg. % Stabilizer for Lot: **0.651**

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.65 %  
**Analyst Signature:**

**Comments**
- **CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND88J070969  
D533 / M6 propellant  
Date of analysis:  
Date: 24 OCT 2012

## Sample Data

<table>
<thead>
<tr>
<th>Solvent</th>
<th>100 ml</th>
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## Other Information

M6 Propellant

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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<tbody>
<tr>
<td>4,4'DNDPA</td>
<td>50.0</td>
<td>0.784</td>
<td>163</td>
<td>776.8</td>
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<td>3.299</td>
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<td>50.0</td>
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<td>24054</td>
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<td>2,4'DNDPA</td>
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<td>75.0</td>
<td>11.732</td>
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</table>

Avg. % Stabilizer for Lot: 0.564

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

MIKE KILE

## Average Total Stabilizers

0.56%

## Analyst Signature

![Signature]

## Comments

Stable: YES | Unstable: NO

CATEGORY: A

Actions to be Taken
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery to said destination. It is to be used otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service done performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, it this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said Bill of Lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Shipper’s No.: 28 U9

At

Shipping Date: 11/26/12

By R/R

Prepaid XXX

Location No.: 2205

Freight Charges: Collect

Purch. Order No.

(Mail or Street Address of Consignee — For purposes of notification only)

Consigned to: Fed Lic. Exp. Date

State Lic. Exp. Date

County Customer No.

Route: Exp. Date

Charge Account of

Customer P.O. No.

Rel. No.

SHIPPED NO. OF PROSG. SHIPPED NO. OF UNITS PROPER SHIPPING NAME AND HAZARD CLASS RETURNED NO. OF PROSG. RETURNED NO. OF UNITS EXEMPTION DOT-E H M Placards Applied to Railcar or Motor Vehicle

UN0161, Powder, Smokeless, 1.3C, PG II #112 EXPLOSIVES 1.3

SEE PR 037

Truck No. 7033

Triar No. 810014

Trailer No. 1814 EDC #12100

Mileage

Gross

Weight

Net Explosive Weight

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY SPILL LEAK FIRE EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-9300 IN CANADA (ERP # 2-0004) 800-561-3938 ELSEWHERE CALL (703) 527-3857

STATE OF LOUISIANA

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Per

DOT Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057 (Shipper)

Signature

Received By

Date

Sent By

Date

019330

EXP_000964
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 29 NOV 2012

B/L# 2809

M-6

IND84F-070436  5 PTS
IND86H-070622  17 PTS
IND85B-070507  9 PTS
IND87B-Y70678  2 PTS
IND88J-070969  2 PTS
IND84B-070325  3 PTS
IND85B-070508  2 PTS
IND87D-070450  1 PT
IND88J-070969-1 PT
IND87C-070886-1 PT
IND81E-070021-1 PT

41 PTS WITH 6 FB @140 LBS PER DRUM
3 PTS WITH 6 FB @ 121 LBS PER DRUM

TOTAL 36,618 LBS

LIONEL KOONS

EXPLO SYSTEMS INC

Load 6

41 @ 140
3 @ 121

39440
2178
36618

EXP_000965
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND85B070507

<table>
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<tr>
<th>Date of analysis:</th>
<th>D533 / M6 propellant</th>
<th>Date: 16 JULY 2012</th>
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### Other Information

<table>
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<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
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## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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</thead>
<tbody>
<tr>
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<td>50.0</td>
<td>0.871</td>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.103</td>
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<tr>
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<td>75.0</td>
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<td></td>
</tr>
</tbody>
</table>

## Avg. % Stabilizer for Lot

0.686

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

### Analyst

Takisha Dickerson

### Avg. Tot. Stabilizers

0.69 %

### Comments

**CATEGORY:** A
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87BY70678  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 OCTOBER 2011

**Other Information**  
M6 Propellant

**Sample Data**  
Solvent

<table>
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<tr>
<th>Sample #</th>
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<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
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**Avg. % Stabilizer for Lot: 0.463**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers:** 0.46 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

## Other Information

- **Sample Data**  
  - Sample: #1  
  - Weight: 0.5000 g  
  - Volume: 100 ml  
  - Solvent: ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.884</td>
<td>715.1</td>
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<td>0.000</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
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<td>794.8</td>
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<td>0.645</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>11.213</td>
<td>1155.8</td>
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<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.899</td>
<td>750.7</td>
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<td>0.000</td>
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<td>0.000</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>46.7</td>
<td>0.006</td>
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**Avg. % Stabilizer for Lot:** 0.651

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

- **Kisha Dickerson**

## Analyst Signature

**Stable**  
**YES**  
**Unstable**

## Comments

**CATEGORY:** A

## Lab. Supervisor Signature

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND88J070969  
**Date of analysis:**  
**Other Information:** M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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</thead>
<tbody>
<tr>
<td>#1</td>
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<tr>
<td></td>
<td>100 ml</td>
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<tr>
<td></td>
<td>ACN</td>
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**Standards (ERG-006)**

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<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.784</td>
<td>163</td>
<td>776.6</td>
<td>0.476</td>
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<tr>
<td>2,4-DNDPA</td>
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<td>3.299</td>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>4.947</td>
<td>2591.5</td>
<td>24054</td>
<td>0.000</td>
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</tr>
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<td>871.2</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
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<td>50.3</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
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<td>9.578</td>
<td>2554.8</td>
<td>81.2</td>
<td>0.003</td>
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<tr>
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<td>11.01</td>
<td>4783.9</td>
<td>969.1</td>
<td>0.081</td>
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<td>11.732</td>
<td>1511.1</td>
<td>286</td>
<td>0.000</td>
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Avg. % Stabilizer for Lot: **0.564**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** MIKE KILE  
**Avg. Tot. Stabilizers:** **0.56 %**

**Analyst Signature:**

**Comments:** CATEGORY: **A**

**Actions to be Taken:**
## Straight Bill of Lading

**RECEIVED.** Subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery or said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service done or performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (g) in Uniform Freight Classification in effect on the date hereof if this is a rail or rail-waymentment, or (h) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of the shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

### Shipment Details

- **Shipper:** Explo Systems, Inc.  
  1600 Java Road  
  Minden, LA 71055

- **Shipper's No.:** 2812

- **At:**

- **By:**

- **Freight Charges:** Collect

- **Prepaid**

- **Location No.:** 2017

- **Shipper's No.:** 2812

- **Shipping Date:** 12-5-12

- **Purchase Order No.:**

### Consignment Details

- **Consigned to:**

- **Destination:**

- **State:**

- **County:**

- **Route:**

- **Charge Account Of:**

- **Customer P.O. No.:**

- **Rel. No.:**

### Hazardous Materials

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EMERGENCY RESPONSE</th>
<th>EX Emption</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
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<td>Units</td>
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<td></td>
<td>EXPLOSIVES 1.3</td>
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<td>Truck No. 6063</td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

### Signature

- **Invoice No.:**

- **FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTRAC — DAY OR NIGHT.**

- **IN THE USA CALL 800-424-9500  IN CANADA (ERP #2-0040) 800-561-3636  ELSEWHERE CALL (703) 527-3939.**

- **I have been offered placards identifying the shipment as specified in 49CFR Subpart of Part 172. I have received the above goods in apparent good order and condition.**

- **Received by:**

- **Q CONSIGNEE Q CARRIER**

- **By:**

- **AUTHORIZED RECEIVER**

---

**EXP_000970**

---

019336
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 5 DEC 2012

B/L# 2812 TRL 7810152

M-6

IND86M-070673  32 PTS

IND82L-070178  4 PTS

IND84B-070323  3 PTS

IND84B-070327  1 PTS

IND82D-070172  2 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82L070178  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 1 FEB 2011

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
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<td>50.0</td>
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<td>1943.1</td>
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<td>361.4</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>365.7</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.446

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.45%

**Analyst Signature:** Stable YES Unstable

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**

**Actions to be Taken:**

---

*Form #1b8  
Original Print Date: 01/19/2010*
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84B070327  
**Date of analysis:** Date: 4 Sep 2012  
**Other Information:** M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
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</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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<tbody>
<tr>
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<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
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<td>501.9</td>
<td>1.028</td>
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<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td></td>
<td>23336</td>
<td>0.000</td>
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</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td></td>
<td>95.7</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td></td>
<td>104</td>
<td>0.004</td>
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</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
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<td>673.4</td>
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<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
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<td>0</td>
<td>0.000</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.086

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- **Mike Klie**

### Average Total Stabilizers
- **1.09 %**

### Comments
- **CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86MY70673  
**D533 / M6 propellant**

**Date of analysis:**
**Date:** 19 OCTOBER 2011

## Other Information

**Sample Data**
- Solvent: ACN
- Sample: #1
- Mass: 0.50 g
- Volume: 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (min)</th>
<th>Intg. Area 1</th>
<th>Sample # Intg. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.86</td>
<td>108.3</td>
<td>540.2 0.499</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.439</td>
<td>927.1</td>
<td>0 0.000</td>
</tr>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.254</td>
<td>682.7</td>
<td>21945 0.000</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.643</td>
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<td>50.0</td>
<td>9.185</td>
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<td>79.1 0.005</td>
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<td>50.0</td>
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<td>75.0</td>
<td>12.798</td>
<td>1360.9</td>
<td>0 0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.527

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

<table>
<thead>
<tr>
<th>Analyst</th>
<th>TAKISHA DICKERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Signature</td>
<td>Stable YES Unstable</td>
</tr>
<tr>
<td>Lab. Supervisor Signature</td>
<td>Comments CATEGORY: A</td>
</tr>
</tbody>
</table>

**Avg. Tot. Stabilizers:** 0.53 %

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery or said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service I owe performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (I) in Uniform Freight Classification in effect on the date hereof, if this is a rail or railroad shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipment hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Freight Charges: Collect
At

By

Prepaid

Location No.

2810

18-5-12

1629

Shipper’s No.
Shipping Date
Purchase Order No.

(Possible Address of Consignee - For purposes of notification only).

Consignee to:

Fed Lic.

Exp. Date

05-15

Exp. Date

Destination:

State

State Lic.

County

Customer No.

Route

Customer P.O. No.

Rel. No.

Charge Account of

PROPER SHIPPING NAME
AND HAZARD CLASS

RETURNED
No. of PROS
No. of UNITS

EMERGENCY
RESPONSE
PROCEDURE
GUIDE NO

EXEMPTION
DOT-E
H
M

Placards Applied to Railcar
or Motor Vehicle

UN0161, Powder, Smokeless, 1.3C, PG II

#112

EXPLOSIVES 1.3

Received

AUSTIN POWDER COMPANY
EAST CAMDEN PLANT

17AIO
DEC - 6 - 2012

12-4-12

7324

1995

11858

80

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT.
IN THE USA CALL 800-424-9300.
IN CANADA (BRP #0044) 800-561-3856. ELSEWHERE CALL (703) 577-3987.

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

12-4-12

Q CONSIGNEE Q CARRIER

AUTHORIZED RECEIVER

Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055
(318) 382-8700

Per

DOT Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00067
(Shipper)

019341

EXP_000975
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 5 DEC 2012

B/L# 2810

M-6

IND86M-070673  13 PTS
IND82L-070178  21 PTS
IND84B-070323  4 PTS
IND86M-070623  1 PT
IND84B-070327  2 PTS
IND82D-070172  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82L070178
D533 / M6 propellant

Date of analysis: Date: 1 FEB 2011

Other Information
Sample Data
M6 Propellant
Solvent
#1 0.5000 g 100 ml ACN

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg Area</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>1943.1 0.174</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>25869.9 2.172</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>145.3 0.011</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
<td>0 0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>13.939</td>
<td>5852.1</td>
<td>386.6 0.007</td>
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<tr>
<td>DPA</td>
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<td>1753.1</td>
<td>361.4 0.082</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>365.7 0.000</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 2.446

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Mike Kile
Avg. Tot. Stabilizers: 2.45 %

Analyst Signature
Stable: YES Unstable
Comments: CATEGORY: A

Lab. Supervisor Signature
Actions to be Taken

Form #158
Original Print Date: 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84B070327  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Sample Data:**  
<table>
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<tr>
<th>Sample #</th>
<th>Solvent</th>
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</thead>
<tbody>
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<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td></td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td></td>
</tr>
</tbody>
</table>

## Analyst

- **Analyst:** Mike Kile  
- **Analyst Signature:** 
- **Avg. Tot. Stabilizers:** 1.09 %  
- **Stable:** YES    | Unstable: 
- **Comments:** CATEGORY: A  
- **Actions to be Taken:** 

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**  
**Date of analysis:** Date: 7 FEB 2012

**Other Information**  
M6 Propellant  
Sample Data  
Solvent  
#1  
0.50 g  
100 ml  
ACN

**Standards (ERG-006)**  

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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</thead>
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<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>ppm</td>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.642</td>
<td>1532.1</td>
<td>67.5</td>
<td>0.004</td>
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<td>2NDPA</td>
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<td>9.759</td>
<td>2784.7</td>
<td>120.3</td>
<td>0.004</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.235</td>
<td>5480.9</td>
<td>727.3</td>
<td>0.053</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.979</td>
<td>1363.1</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.965

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.97%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (i) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect
Prepaid

Shipping Date

Purchase Order No.

Shipper's No.

Location No.

Charge Account of

Customer P.O. No.

Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED No. of</th>
<th>SHIPPED No. of</th>
<th>PROPER SHIPPING NAME</th>
<th>RETURNED No. of</th>
<th>RETURNED No. of</th>
<th>EXEMPTION DOT/E</th>
<th>HM</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
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<td>84.34</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
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<td>112</td>
<td>Explosives 1.3</td>
<td>4</td>
<td>EXPLOSIVES 1.3</td>
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</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300
IN CANADA (ERP #2-0040) 800-561-3836
ELSEWHERE CALL (703) 527-3881

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

Q CONSIGNEE

Q CARRIER

Date

By

AUTHORIZED RECEIVER

Agent must detach and retain this Shipping Order

019346

EXP_000980
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 6 DEC 2012

B/L# 2814 TRL 70357

M-6

IND86M-070673   12 PTS
IND82L-070178    7 PTS
IND84G-070326    2 PTS
IND83F-070278    2 PT
IND82D-070113    1 PT
IND83G-070281    2 PTS
IND82D-070110    6 PTS
IND82H-070168    2 PTS
IND83F-070276    8 PTS
42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82L070178  
**Date of analysis:**  
**Solvent:** ACN  
**Sample Data**  
<table>
<thead>
<tr>
<th>Sample</th>
<th>0.5000 g</th>
<th>100 ml</th>
</tr>
</thead>
</table>

**Other Information**  
**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (min)</th>
<th>Intg Area</th>
<th>Conc. Area (%</th>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
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<td>1943</td>
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<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
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<td></td>
<td>2586</td>
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<td>2,2'-DNDPA</td>
<td>50.0</td>
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<td>1694.7</td>
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<td></td>
<td>97.6</td>
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<td>388.6</td>
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<td>1753.1</td>
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<td>361.4</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>16.932</td>
<td>2535.1</td>
<td></td>
<td></td>
<td>365.7</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.446

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kille  
**Avg. Tot. Stabilizers:** 2.45%

** Analyst Signature:**  
**Comments:**

**Lab. Supervisor Signature:**

**Actions to be Taken:**

---

Form #158  
Original Print Date: 07/19/2010

EXP_000982
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070113  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 JAN 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
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<tbody>
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<td>#1</td>
<td>ACN</td>
</tr>
<tr>
<td>0.50 g</td>
<td>100 ml</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>% Area</th>
<th>Conc. Intg.</th>
<th>% Intg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
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<td>0.276</td>
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<td>3.304</td>
<td>1019.8</td>
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<td>16</td>
<td>0.002</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
<td></td>
<td>21955</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.018</td>
<td>1103.9</td>
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<td>0</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
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<td>66.8</td>
<td>0.004</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
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<td>143.1</td>
<td>0.004</td>
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<td>200.0</td>
<td>10.956</td>
<td>6219.8</td>
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<td>790.9</td>
<td>0.061</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.336

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.34 %

---

**Analyst Signature**

**Stable**  
**YES**  
**Unstable**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

019349  
EXP_000983
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**D533 / M6 propellant**

**Date of analysis:** Date: 27 JULY 2011

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
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</tbody>
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## Standards (ERG-008)

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<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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<td>50.0</td>
<td>0.694</td>
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<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
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<td>0.000</td>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.339</td>
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<td>22925</td>
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<td>50.0</td>
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<td>9.392</td>
<td>1634.2</td>
<td>119.1</td>
<td>0.007</td>
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<td>50.0</td>
<td>10.693</td>
<td>2958.2</td>
<td>134.9</td>
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<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.415

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42 %

**Analyst Signature**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 FEB 2011

## Other Information
- **Sample Data:**
  - #1: 0.5000 g  
  - 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1118</td>
<td>2540.4</td>
<td>0.228</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
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<td>2.622</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.967</td>
<td>1694.7</td>
<td>51.5</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>143.2</td>
<td>0.011</td>
</tr>
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<td>4NDDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
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<td>0.000</td>
</tr>
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<td>2NDPA</td>
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<td>5852.1</td>
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<td>15.022</td>
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<td>0.000</td>
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<td>18.932</td>
<td>2535.1</td>
<td>985.4</td>
<td>0.000</td>
</tr>
</tbody>
</table>

- **Avg. % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst
- **Mike Kile**

- **Avg. Tot. Stabilizers:** 2.88 %

## Analyst Signature

**Stable** YES Unstable

## Comments
- **CATEGORY:** A

## Actions to be Taken

---

019351

EXP_000985
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND83F070278

Date of analysis: Date: 11 JULY 2012

Other Information

Sample Data Solvent

#1 0.50 g 100 ml ACN

M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
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<td>50.0</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
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<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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</tbody>
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Avg. % Stabilizer for Lot: 0.843

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson

Avg. Tot. Stabilizers: 0.84%

Analyst Signature

Stable: YES Unstable

Comments: CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken

Form #158

Original Print Date: 07/19/2010

EXP_000986
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Other Information**  
**Sample Data**  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-008)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area</th>
<th>%</th>
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</thead>
<tbody>
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<td>7.652</td>
<td>1041.4</td>
<td>23.8</td>
<td>0.002</td>
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<td>2NDPA</td>
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<td>455.7</td>
<td>0.031</td>
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**Avg. % Stabilizer for Lot**

0.365

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
KISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.36%

**Analyst Signature**

**Stable**  
YES  
Unstable

**Comments**

CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**

019353  
EXP_000987
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND83G070281  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Sample Data:**  
| Solvent | #1 | 0.50 g | 100 ml | ACN |

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Time</th>
<th>Area</th>
<th>Area %</th>
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<tbody>
<tr>
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<td>0.874</td>
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<td>1509.1</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.549

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Analyst Signature:**  
**Avg. Tot. Stabilizers:** 0.55 %  
**Stable:** YES  
**Unstable:**  
**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**  
**Actions to be Taken:**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_000988
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

### Date of analysis:
**Date:** 18 JULY 2012

### Other Information
- **Sample Data:** #1, 0.50 g, 100 ml, ACN
- **Solvent:** ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
<td>496.4</td>
<td>0.372</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.365</td>
<td>949.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.091</td>
<td>2605.4</td>
<td>24044</td>
<td>0.000</td>
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<td>2,4'-DNDPA</td>
<td>50.0</td>
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<td>0.000</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
<td>1698.8</td>
<td>49.1</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.142</td>
<td>3039.5</td>
<td>84.6</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.585</td>
<td>6044.7</td>
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<td>0.052</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.4</td>
<td>1395.6</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot : **0.430**

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- **Takisha Dickerson**

#### Analyst Signature

#### Lab. Supervisor Signature

### Avg. Tot. Stabilizers : **0.43 %**

### Comments
- **CATEGORY:** A

### Actions to be Taken

---

019355

EXP_000989
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M0700673  
**Date of analysis:**  
**D533 / M6 propellant**  
**Date:** 7 FEB 2012

### Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>50.1</td>
<td></td>
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</tr>
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<td>726.8</td>
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<td></td>
</tr>
<tr>
<td>2,4' DNOPA</td>
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<td>7.182</td>
<td>1225.5</td>
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<tr>
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<td>50.0</td>
<td>8.642</td>
<td>1532.1</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>9.759</td>
<td>2784.7</td>
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</tr>
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<td>N-NitrosodPA</td>
<td>75.0</td>
<td>11.979</td>
<td>1363.1</td>
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### Sample #

<table>
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<tr>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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<tbody>
<tr>
<td>452.6</td>
<td>0.903</td>
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<td>0</td>
<td>0.000</td>
<td>22299</td>
<td>0.000</td>
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<td>67.5</td>
<td>0.004</td>
<td>120.3</td>
<td>0.004</td>
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<tr>
<td>727.3</td>
<td>0.053</td>
<td>0</td>
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</table>

### Avg. % Stabilizer for Lot

0.965

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst Information

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.97 %  
**Analyst Signature:** Stable  
**Unstable**  
**Comments:** CATEGORY: A  
**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, end destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It must be agreed to by each party at any time interested in all or any of said property, that every service order performed hereunder shall be subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (t) in Uniform Freight Classification in effect on the date hereof.

It is either a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and acceptor for himself and his assigns.

---

<table>
<thead>
<tr>
<th>Shipper: Explo Systems, Inc.</th>
<th>Shipping No.</th>
<th>2815</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 Java Road</td>
<td>Shipping Date</td>
<td>1/26/17</td>
</tr>
<tr>
<td>Minden, LA 71055</td>
<td>Purchase Order No.</td>
<td></td>
</tr>
<tr>
<td>At:</td>
<td>Location No.</td>
<td>1027</td>
</tr>
<tr>
<td>By</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freight Charges: Collect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepaid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Mail or Street Address of Consignee — For purposes of notification only)

<table>
<thead>
<tr>
<th>Consignee</th>
<th>Fed Lic.</th>
<th>Exp. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin Powder Co.</td>
<td>5-18-10</td>
<td>4-1-16</td>
</tr>
<tr>
<td>State</td>
<td>State Lic.</td>
<td>Exp. Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>County</td>
<td>Customer No.</td>
<td></td>
</tr>
<tr>
<td>Route</td>
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<td></td>
</tr>
<tr>
<td>Charge Account</td>
<td>Customer P.O. No.</td>
<td>Rel. No.</td>
</tr>
<tr>
<td>720 574 0580 6200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>SHIPPED No. of PKGS</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PKGS</th>
<th>RETURNED No. of UNITS</th>
<th>EMERGENCY RESPONSE PROCEDURE SUBCODE</th>
<th>EXEMPTION -DOT-E</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>019357</td>
<td>12</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
<td></td>
<td>EXPLOSIVES 1.3</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature: _____________________________

Invoice No. _________________________

for Chemical Emergency, Spill, Leak, Fire, Exposure or Accident Call Chemtrec — Day or Night

In the USA Call 800-424-9300

In Canada (ERP: 2-0040) 800-561-3630

Elsewhere Call (703) 527-3887

---

Received By: O Consignee O Carrier

Date: 1/26/17

DOT Hazardous Material Handling Number: _______________________

Local Federal Explosives License No. 5-LA-119-20-1A-00057

(Shipper)

---

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By: ______________________

Date: 1/26/17

By: Authorized Receiver
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 6 DEC 2012

B/L# 2815 TRL 30030

M-6

IND83F-070278  4 PTS
IND82D-070113  2 PTS
IND83G-070281  2 PTS
IND82H-070168  5 PTS
IND83F-070276  27 PTS
IND83F-070018  2 PTS

IND83F-070276  8 PTS
42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**Date of analysis:** 4 April 2012  
**Other Information:**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm Time</td>
<td>Area 1</td>
<td>Area %</td>
<td></td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.881</td>
<td>40.9</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.279</td>
<td>928</td>
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<td>2,2' DNDPA</td>
<td>50.0</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>6.571</td>
<td>992.8</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>7.798</td>
<td>1662.7</td>
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<tr>
<td>2NDA</td>
<td>50.0</td>
<td>8.806</td>
<td>2938.9</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.221</td>
<td>5774.5</td>
</tr>
<tr>
<td>N-NitrosDPA</td>
<td>75.0</td>
<td>10.895</td>
<td>1475.9</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.312

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.31 %  
**Comment:**  

<table>
<thead>
<tr>
<th>Stable</th>
<th>YES</th>
<th>Unstable</th>
</tr>
</thead>
</table>

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND83F070278

**D533 / M6 propellant**

**Date of analysis:**

**Date:** 11 JULY 2012

**Other Information**

**Solvent**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
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<td>50.0</td>
<td>0.803</td>
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<td>258.2</td>
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<tr>
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<td>50.0</td>
<td>3.397</td>
<td>945.1</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.155</td>
<td>1995.1</td>
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<td>21574</td>
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<tr>
<td>2,4 DNDPA</td>
<td>50.0</td>
<td>7.525</td>
<td>949.2</td>
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<td>0</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.04</td>
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<td>89.7</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.278</td>
<td>2854</td>
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<td>200.0</td>
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<td>589.5</td>
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<td>75.0</td>
<td>12.608</td>
<td>1872.4</td>
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<td>0</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:**

\[
0.843
\]

0.30% or more is Stability Code A

0.20% -0.29% is Stability Code C

Less than 0.20% is Stability Code D

## Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers:**

\[
0.84 \%
\]

**Analyst Signature**

**Stable:**

YES Unstable

**Comments**

CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**Date of analysis:** Date: 4 Sep 2012  
**Other Information**  
M6 Propellant  
Sample Data  
#1  
Solvent  
0.50 g  
100 ml  
ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>578.6</td>
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<td>2,2'-DNDPA</td>
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<td>5.222</td>
<td>777.3</td>
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<td>0.000</td>
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<td>12.757</td>
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<td>0.000</td>
</tr>
</tbody>
</table>

### Sample Data

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

<table>
<thead>
<tr>
<th>Analyst</th>
<th>Avg. Tot. Stabilizers</th>
<th>Avg. % Stabilizer for Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Kile</td>
<td>1.25%</td>
<td>1.249</td>
</tr>
</tbody>
</table>

### Analyst Signature

**Stable** YES Unstable

### Comments

CATEGORY: A

### Actions to be Taken
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82H070168  D533 / M6 propellant

Date of analysis:  Date: 1 FEB 2011

Other Information

Sample Data

Solvent

#1  0.5000 g  100 ml  ACN

M6 Propellant

Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
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<td>50.0</td>
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<td>4NDPA</td>
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<td>12.459</td>
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<td>0.000</td>
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<td></td>
<td>838.5</td>
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<td>985.4</td>
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Avg. % Stabilizer for Lot 2.875

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst Mike Kile

Avg. Tot. Stabilizers 2.88

Analyst Signature

Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070113  
**Date of analysis:** Date: 6 JAN 2012  
**D533 / M6 propellant**

#### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td>328.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
<td>16</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.943</td>
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<td>21955</td>
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<td>7.018</td>
<td>1103.9</td>
<td>0</td>
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<tr>
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<td>8.439</td>
<td>1782.5</td>
<td>66.8</td>
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<td>790.9</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.859</td>
<td>1532.4</td>
<td>0</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot**  
0.336

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers** 0.34 %  
**Analyst Signature**  
**Comments** CATEGORY: A

**Lab. Supervisor Signature**  
**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of package unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It or its agents, or otherwise to deliver to another carrier on the route to said destination, it is mutually agreed, as to each of all or any of said property over all or any portion of said route to said destination, and as to each parcel of any time interested in all or any of said property, that every service (done or performed) hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, the terms being the classification or tariff which governs the transportation of the consignor, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Shipper:
Explo Systems, Inc.
1800 Java Road
Mindem, LA 70125

At

By

Freight Charges: Collect
Prepaid

Shipping Date
Purchase Order No.

Consignee:

Mail or Street Address of Consignee: For purposes of notification only.

Fed. Lic.
Exp. Date

State Lic.
Exp. Date

Location No.

Customer No.

Charge Account Of

Customer P.O. No.

Rel. No.

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

DOT Hazardous Material Handling Number
Local Federal Explosives License No. 5-LA-119-20-1A-00057

Per

EXPLORIVES 1.3

EXP_000998
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 11 DEC 2012

B/L# 2816 TRL 30075

M-6

IND83F-070278 4 PTS
IND84A-070323 4 PTS
IND83G-070281 1 PT
IND83F-070276 9 PTS
IND82D-070110 6 PIS
IND84B-070327 10 PTS
IND82J-070172 4 PTS
IND82K-070175 1 PT
IND81L-070072 1 PT
IND86M-070673 2 PTS
IND82L-070178 2 PIS

44 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 36 960

LIONEL KOONS
EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number:IND86M070673</th>
<th>D533 / M6 propellant</th>
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<tbody>
<tr>
<td>Date of analysis:</td>
<td>Date: 7 FEB 2012</td>
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</tbody>
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### Standards (ERG-006)

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<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td></td>
<td>Intg.</td>
</tr>
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<td>8.642</td>
<td>1532.1</td>
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<tr>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.979</td>
<td>1363.1</td>
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</tr>
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</table>

| Avg. % Stabilizer for Lot | 0.965 |

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

<table>
<thead>
<tr>
<th>Analyst</th>
<th>TAKISHA DICKERSON</th>
<th>Avg. Tot. Stabilizers</th>
<th>0.97 %</th>
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<tbody>
<tr>
<td>Analyst Signature</td>
<td></td>
<td>Stable</td>
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</tr>
<tr>
<td>Comments</td>
<td>CATEGORY: A</td>
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<td></td>
</tr>
<tr>
<td>Lab. Supervisor Signature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actions to be Taken</td>
<td></td>
<td></td>
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</tr>
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Form #158  
Original Print Date:07/19/2010  
EXP_001000

019366
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84B070327  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 4 Sep 2012

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. (ppm)</th>
<th>Intg. (Time)</th>
<th>Intg. (Area)</th>
<th>Area 1</th>
<th>Intg. (Conc.)</th>
<th>Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
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<tr>
<td>2,4-DNDPA</td>
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<td></td>
<td>0.000</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
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<td>0.000</td>
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</tr>
<tr>
<td>2,4’ DNDPA</td>
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<td></td>
<td>0.000</td>
<td></td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>95.7</td>
<td></td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>104</td>
<td></td>
<td>0.004</td>
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</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>673.4</td>
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<td>0.047</td>
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<tr>
<td>N-NitrosoDPA</td>
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<td>1337.5</td>
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<td>0.000</td>
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</tbody>
</table>

## Analysis

Avg. % Stabilizer for Lot: 1.086

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.09 %

## Analyst Signature

**Stable:** YES

**Unstable:**

## Comments

**CATEGORY:** A

**Actions to be Taken:**

---

**Form #158**

**Original Print Date:** 07/19/2010

**EXP_001001**
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND84A070323  
D533 / M6 propellant  

Date of analysis:  
Date: 21 DEC 2011  

Other Information  
M6 Propellant  
Sample Data  
Sample #  
Solvent  
#1  
0.50 g  
100 ml  
ACN  

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
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<td>4',4' DNDPA</td>
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</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
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<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.402

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

Analyst: TAKISHA DICKERSON  
Avg. Tot. Stabilizers: 0.40 %

Analyst Signature

Stable: YES  
Unstable

Comments: CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Date of analysis:** Date: 4 Sep 2012

**Other Information**  
**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Intg. Conc. Area %</td>
</tr>
<tr>
<td></td>
<td>ppm Time Area 1</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0 0.889 48.8</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0 3.418 914.3</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0 5.22 777.3</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0 7.622 980.5</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 9.134 1586.8</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0 10.417 2826.3</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 11.797 5671.5</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 12.757 1337.5</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.249

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.25 %  
**Stable:** YES Unstable

**Analyst Signature**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**

**Date of analysis:** Date: 4 April 2012

**M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>0</td>
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<td>4NDPA</td>
<td>50.0</td>
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<td>158.3</td>
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<td>10.221</td>
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<td>10.895</td>
<td>1475.9</td>
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<td>0</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.312

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.31 %

**Analyst Signature**  
**Stable** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 11 JULY 2012

## Sample Data

<table>
<thead>
<tr>
<th>Sample #</th>
<th>#1</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
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</table>

## Other Information

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.803</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.397</td>
<td>945.1</td>
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<td>0.000</td>
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<td>2,2' DNDPA</td>
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<td>1580.4</td>
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Avg. % Stabilizer for Lot: 0.843

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst Signatures

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.84 %  
**Analyst Signature**

**Comments:**

- **Category:** A  
- **Stable:** YES | Unstable

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82L070178  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 FEB 2011

**Other Information**  
Sample Data

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
</tbody>
</table>

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
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<td>50.0</td>
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<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 2.446

---

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.45 %

**Analyst Signature:** Stable YES Unstable

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**

**Actions to be Taken:**

---

Form #158  
Original Print Date: 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**Date of analysis:** 6 AUG 2010  
**D533 / M6 propellant**

**Solvent**

<table>
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<tr>
<th>Sample Data</th>
<th>0.5000 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

**Other Information**

- **M6 Propellant**

---

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>4.91</td>
<td>382.3</td>
<td>5134.1</td>
<td>1.343</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>9.825</td>
<td>437</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>11.341</td>
<td>632.4</td>
<td>87.4</td>
<td>0.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4DNDPA</td>
<td>50.0</td>
<td>11.95</td>
<td>441.7</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2DNDPA</td>
<td>50.0</td>
<td>12.713</td>
<td>827.6</td>
<td>192.5</td>
<td>0.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.06</td>
<td>2176</td>
<td>90.1</td>
<td>0.017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.999</td>
<td>558.4</td>
<td>254.6</td>
<td>0.068</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Avg. % Stabilizer for Lot**  
1.465

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**  
Mike Kile

**Avg. Tot. Stabilizers**  
1.46 %

**Analyst Signature**

**Stable**  
YES

**Unstable**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND82J070172  
**D533 / M6 propellant**

**Date of analysis:** Date: 15 July 2011

**Other Information**

**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intg.</strong></td>
<td><strong>Conc.</strong></td>
</tr>
<tr>
<td>ppm Time Area 1</td>
<td>%</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4'-DNPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.498

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.50 %  
**Stable:** YES  
**Unstable:**

**Comments**

- **CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**Date of analysis:**  
**DS33 / M6 propellant**  
**Date:** 27 JULY 2011  
**Solvent:**  
**Sample Data**  
#1 0.50 g 100 ml ACN

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Concentration (ppm)</th>
<th>Retr. Time</th>
<th>Int. Area</th>
<th>Conc. Int.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
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<td>0.000</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
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<td>13.103</td>
<td>1385.2</td>
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Avg. % Stabilizer for Lot: 0.415

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.42 %

**Stable:** YES  
**Unstable**

**Comments:** CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
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<tr>
<td>2NDPA</td>
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<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**: 0.363

- **0.30% or more** is Stability Code A
- **0.20% - 0.29%** is Stability Code C
- **Less than 0.20%** is Stability Code D

**Analyst**: Takisha Dickerson

**Avg. Tot. Stabilizers**: 0.36%

**Analyst Signature**: Stable, YES, Unstable

**Comments**: CATEGORY: A

**Lab. Supervisor Signature**: Actions to be Taken
CONTAINS HAZARDOUS MATERIALS

STRAIGHT BILL OF LADING  NOT NEGOTIABLE

RECEIVED, subject to the classification and tariffs in effect on the date of this issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (condition and contents of contents of packages unknown) consigned, and destinied as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the consignor) agrees to carry to its usual point of delivery at said destination. If on its route, otherwise to deliver to another carrier on the route in said destination. It is mutually agreed, as to each of all or any of said property or any portion of said route to destination, and to or to each party at time interested in all or any of said property, that every service or transportation carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Act (A) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (B) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper's Name: 2017

Shipping Date: 12/12/17

Purchase Order No.:

By 1627

Freight Charges: Collect

Prepaid: Y

Location No.:

Mail or Street Address of Consignee — For purposes of notification only:

Consigned to:

Fed Lic.

Exp. Date:

Date:

Exp. Date:

State Lic.

Customer No.

Customer P.O. No.

Rel. No.

Proper Shipping NAME AND NAHA/HAZUS CLARS

UN0161, Powder, Smokeless, 1.3C, PG II

#112

EXCEPTION NO.

H M

Placards Applied to Railor or Motor Vehicle

EXPLOSIVES 1.3

Track No.:

Trailer No.:

Volume

Cross

Weight #

Net Explosive Weight

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL, EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTRAC — DAY OR NIGHT IN THE USA CALL 800-424-9300 IN CANADA (ERP #2 0040) 605-951-0699 ELSEWHERE CALL (703) 771-2980

Received By:

AGREEING TO CARRIER

Authorized Receiver

019377 EXP_001011
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 11 DEC 2012

B/L# 2817 TRL 30020

M-6

IND82J-070172  12 PTS
IND84A-070323  9 PTS
IND82K-070175  8 PTS
IND84B-070327  10 PTS
IND82L-070178  2 PTS
IND86M-070673  3 PTS

44 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 36,960

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**

**Date of analysis:** Date: 7 FEB 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td></td>
</tr>
<tr>
<td>0.50 g</td>
<td>100 ml</td>
</tr>
<tr>
<td>ACN</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm Time</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0 0.863</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0 3.336</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0 5.03</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0 7.182</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 8.642</td>
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<td>50.0 9.759</td>
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<tr>
<td>DPA</td>
<td>200.0 11.235</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0 11.979</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot 0.965

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers** 0.97 %

**Analyst Signature**  
**Stable** YES  
**Unstable**

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84B070327  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 4 Sep 2012

**Other Information**  
**Sample Data**  
**Solvent**  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>501.9</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>23336</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>960.5</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>95.7</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
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<td>673.4</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.086

0.30% or more is Stability Code A  
0.20% -0.25% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.09%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Lab. Supervisor Signature**  
**Comments**  
**CATEGORY:** A  
**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001014
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323
**D533 / M6 propellant**

**Date of analysis:** Date: 21 DEC 2011

**Other Information**
- Sample Data: Sample #1
- 0.50 g
- 100 ml
- ACN

**Solvent**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.402

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON
**Avg. Tot. Stabilizers:** 0.40 %

**Analyst Signature**
**Stable:** YES  **Unstable**

**Comments**
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82L070178  
**D533 / M6 propellant**

**Date of analysis:** Date: 1 FEB 2011  
**Other Information:**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm Time Area 1</td>
</tr>
<tr>
<td>4,4-DNDA</td>
<td>50.0 4.156 1116</td>
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<tr>
<td>2,4-DNDA</td>
<td>50.0 9.388 1191.2</td>
</tr>
<tr>
<td>2,2'-DNDA</td>
<td>50.0 10.967 1694.7</td>
</tr>
<tr>
<td>2,4'-DNDA</td>
<td>50.0 11.73 1272.3</td>
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<tr>
<td>4NDPA</td>
<td>50.0 12.459 2443.3</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0 13.939 5852.1</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 15.022 1753.1</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 18.932 2536.1</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 2.446

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.45 %

**Analyst Signature**  
**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**

---

Form #188  
Original Print Date: 07/19/2010

019382  
EXP_001016
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**D533 / M6 propellant**  
**Date of analysis:** Date: 6 AUG 2010

**Other Information**  
M6 Propellant

---

**Sample Data**  
| Solvent | #1 | 0.5000 g | 100 ml | ACN |
---|---|---|---|---|

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm Time Area 1</td>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0 4.91 382.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0 9.825 437</td>
<td>5134.1</td>
<td>1.343</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0 11.341 632.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0 11.95 441.7</td>
<td>87.4</td>
<td>0.014</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 12.713 827.6</td>
<td>192.5</td>
<td>0.023</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 14.06 2176</td>
<td>90.1</td>
<td>0.017</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 14.999 558.4</td>
<td>254.6</td>
<td>0.068</td>
</tr>
</tbody>
</table>

---

**Avg. % Stabilizer for Lot**

1.465

---

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

---

**Analyst**

Mike Kile

**Avg. Tot. Stabilizers**

1.46 %

---

**Analyst Signature**

Stable YES Unstable

---

**Lab. Supervisor Signature**

Comments

CATEGORY: A

---

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82J070172  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 15 July 2011

**Sample Data**
- **Solvent:** ACN
- **Sample:** #1
- **Weight:** 0.50 g
- **Volume:** 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.898</td>
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<td>278.3</td>
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<tr>
<td>2,4-DNDPA</td>
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<td>0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
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<td>112.7</td>
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<td>25324</td>
</tr>
<tr>
<td>2,4' DNAP</td>
<td>50.0</td>
<td>7.82</td>
<td>1131.9</td>
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<td>0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.358</td>
<td>1817.5</td>
<td></td>
<td>137.4</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.643</td>
<td>3250</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.037</td>
<td>1551.7</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.498

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature:** Stable YES Unstable

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:** Actions to be Taken
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 19 DEC 2012

R/L# 2823

M-6

IND83F-070274  4 PTS
IND85B-070507  3 PTS
IND81G-070061  5 PTS
IND84K-070432  6 PTS
IND81D-070020  6 PTS
IND81D-070019  8 PTS
IND88J-070969  3 PTS
IND86H-070622  2 PTS
IND84G-070331  1 PT
IND84G-070326  4 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280

LIONEL KOONS

EXPLO SYSTEMS INC
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88J070969  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 24 OCT 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
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<tr>
<td>2,4’ DNDPA</td>
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<tr>
<td>4NDPA</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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Avg. % Stabilizer for Lot 0.564

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** MIKE KILE  
**Avg. Tot. Stabilizers** 0.56 %

**Analyst Signature**

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85B070507  
**D533 / M6 propellant**  
**Date of analysis:** Date: 16 JULY 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
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<tbody>
<tr>
<td>#1 0.50 g</td>
<td>100 ml</td>
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## Standards (ERG-006)

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<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
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<td>5.103</td>
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<td>22961</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.367</td>
<td>1376.5</td>
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<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.686

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.69%

**Stable: YES Unstable**

**Comments**  
CATEGORY: A

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 3 MAY 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

**M6 Propellant**

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.867</td>
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<td>2,4-DNDPA</td>
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<td>4NDPA</td>
<td>50.0</td>
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<td>2NDPA</td>
<td>50.0</td>
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<td>200.0</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.897</td>
<td>1704.5</td>
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**Avg. % Stabilizer for Lot:** 0.364

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.36%

**Analysis Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070452  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 13 AUGUST 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
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<tbody>
<tr>
<td>#1 0.50 g</td>
<td>100 ml ACN</td>
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</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
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<tbody>
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<td>2,4-DNDDP</td>
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<tr>
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<td>4DDA</td>
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<td>75.0</td>
<td>12.349</td>
<td>1509.1</td>
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</table>

## Avg. % Stabilizer for Lot: 0.622

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**  
**Avg. Tot. Stabilizers:** 0.62%

### Analyst Signature

[Signature]

### Lab. Supervisor Signature

[Signature]

### Comments

**CATEGORY:** A

### Actions to be Taken
## HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 27 JULY 2011

### Sample Data

<table>
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<tr>
<th>Sample</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>0.50</td>
<td>g</td>
<td>100 ml</td>
<td>ACN</td>
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### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Sample #</th>
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<td>Intg.</td>
<td>Conc. Area</td>
</tr>
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<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.694</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.339</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.842</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
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<td>50.0</td>
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<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
<td>5630.5</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

0.590

- **0.30% or more is Stability Code A**  
- **0.20% - 0.29% is Stability Code C**  
- **Less than 0.20% is Stability Code D**

### Analyst

- **Takisha Dickerson**

### Analyst Signature

**Stable** YES Unstable

**Comments**

- **CATEGORY:** A

### Lab. Supervisor Signature

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**Date of analysis:**  

**D533 / M6 propellant**  
**Date:** 29 MAY 2012

### Other Information

- **Sample Data:** 
  - #1  
  - 0.50 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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</table>

### Analyst

- **Takisha Dickerson**

### Comments

- **Stable:** YES  
- **Unstable:**

### Actions to be Taken

- **CATEGORY:** A

---

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D
## HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81D070020  
Date of analysis:  
Other Information:  
M6 Propellant  
Sample Data:  
Solvent: ACN  
Sample #:  

### Standards (ERG-008)

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<th>Conc. (ppm)</th>
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<th>Conc. %</th>
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<tbody>
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Avg. % Stabilizer for Lot: 0.797

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

Mike Kile  

### Analyst Signature

**Stable**  

### Comments

**CATEGORY:** A  

### Actions to be Taken

""
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND81G070061

<table>
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</thead>
</table>

## Date of analysis:  
Date: 12 JULY 2011

### Other Information

M6 Propellant

### Sample Data

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Weight (g)</th>
<th>Volume (ml)</th>
<th>Solvent</th>
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</thead>
<tbody>
<tr>
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<td>ACN</td>
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</tbody>
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## Standards (ERG-006)

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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
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<tbody>
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<td>75.0</td>
<td>13.034</td>
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**Avg. % Stabilizer for Lot:** 0.421

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst
Mike Kile

## Analyst Signature

## Avg. Tot. Stabilizers
0.42%

## Comments

### CATEGORY: A

## Actions to be Taken
## STRAIGHT BILL OF LADING

### NOT NEGOTIABLE

**RECEIVED subject to the conditions and terms in effect on the date of this Original Bill of Lading**

The property described below is in apparent good order, except as noted (condition and description of packages, containers, or other items as indicated below), which shall remain the risk of the consignee. The consignee agrees to make payment for the property under this bill of lading upon the consignor's receipt of the property and is subject to the terms and conditions of the Uniform Commercial Code, as well as any other applicable law or regulation.

**Shipper:** Explo Systems, Inc.
1600 Jaffa Road
Minden, LA 71055

**At:**

**By:** Collect

**Freight Charges:** Collect

**Prepaid:** Y

**Location No.:** 248725

**Shipper's Name:** 2324

**Shipping Date:** 12/16/11

**Purchase Order No.:**

**P.O. No.:**

### CHARGES ACCOUNTED FOR

<table>
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<tr>
<th>Description</th>
<th>P.O. No.</th>
<th>Reference No.</th>
<th>Quantity</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN0151, Powder, Sustained, 1.3C, PG II</td>
<td>#112</td>
<td>7AT16</td>
<td>40</td>
<td>40</td>
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</tbody>
</table>

**Charge Account of:** JABZ5071658574202

**Customer P.O. No.:**

**Ref. No.:**

### SHIPPED GOODS

<table>
<thead>
<tr>
<th>Description</th>
<th>UN0151, Powder, Sustained, 1.3C, PG II</th>
<th>7AT16</th>
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</thead>
<tbody>
<tr>
<td><strong>Weight:</strong></td>
<td>40 lbs.</td>
<td>40</td>
</tr>
</tbody>
</table>

**Net Weight:** 40 lbs.

**Exempt:** EXPLOSIVES 1.3

### SHIPPED TO

**TO:**

**Description:**

**Shipping Address:**

**Place:**

**State:**

**County:**

**Route:**

**City:**

**State:**

**Zip Code:**

**Consignment No.:**

**Consignee:**

**Address:**

**City:**

**State:**

**Zip Code:**

**Telephone:**

**Fax:**

**Email:**

**Website:**

**Other:**

### SHIPPER'S INFORMATION

**Name:** Explo Systems, Inc.

**Address:** 1600 Jaffa Road
Minden, LA 71055

**Phone:**

**Fax:**

**Email:**

**Website:**

### INVOICE

**Invoice No.:**

**Bill of Lading No.:**

**Shipment Date:**

**Expiry Date:**

**Packing List:**

**Certification:**

**Certifier:**

**Certification Statement:**

**Signatures:**

**Driver:**

**Truck:**

**Driver's License No.:**

**Registration No.:**

**Hazardous Material Handling Number:**

**DOT:**

**EXHIBIT MATERIALS:**

**Dimensions:**

**Net Weight:**

**Stability Data:**

**Routing:**

**Handling:**

**Special Instructions:**

**Temperature:**

**Special Handling:**

**Special Precautions:**

**Special Equipment:**

**Additional Information:**

**Emergency Information:**

**Emergency Phone:**

**Release:**

**Authorized Receiver:**

**Date:**

**Signature:**

**Shipper:**

**Consignee:**

**Carrier:**

**Name:**

**Address:**

**Phone:**

**Fax:**

**Email:**

**Website:**

**Certification:**

**Certifier:**

**Certification Statement:**

**Signatures:**

**Driver:**

**Truck:**

**Driver's License No.:**

**Registration No.:**

**Hazardous Material Handling Number:**

**DOT:**

**EXHIBIT MATERIALS:**

**Dimensions:**

**Net Weight:**

**Stability Data:**

**Routing:**

**Handling:**

**Special Instructions:**

**Temperature:**

**Special Handling:**

**Special Precautions:**

**Special Equipment:**

**Additional Information:**

**Emergency Information:**

**Emergency Phone:**

**Release:**

**Authorized Receiver:**

**Date:**

**Signature:**

**Shipper:**

**Consignee:**

**Carrier:**

**Name:**

**Address:**

**Phone:**

**Fax:**

**Email:**

**Website:**

**Certification:**

**Certifier:**

**Certification Statement:**

**Signatures:**

**Driver:**

**Truck:**

**Driver's License No.:**

**Registration No.:**

**Hazardous Material Handling Number:**

**DOT:**

**EXHIBIT MATERIALS:**

**Dimensions:**

**Net Weight:**

**Stability Data:**

**Routing:**

**Handling:**

**Special Instructions:**

**Temperature:**

**Special Handling:**

**Special Precautions:**

**Special Equipment:**

**Additional Information:**

**Emergency Information:**

**Emergency Phone:**

**Release:**

**Authorized Receiver:**

**Date:**

**Signature:**

**Shipper:**

**Consignee:**

**Carrier:**

**Name:**

**Address:**

**Phone:**

**Fax:**

**Email:**

**Website:**

**Certification:**

**Certifier:**

**Certification Statement:**

**Signatures:**

**Driver:**

**Truck:**

**Driver's License No.:**

**Registration No.:**

**Hazardous Material Handling Number:**

**DOT:**

**EXHIBIT MATERIALS:**

**Dimensions:**

**Net Weight:**

**Stability Data:**

**Routing:**

**Handling:**

**Special Instructions:**

**Temperature:**

**Special Handling:**

**Special Precautions:**

**Special Equipment:**

**Additional Information:**

**Emergency Information:**

**Emergency Phone:**

**Release:**

**Authorized Receiver:**

**Date:**

**Signature:**

**Shipper:**

**Consignee:**

**Carrier:**

**Name:**

**Address:**

**Phone:**

**Fax:**

**Email:**

**Website:**

**Certification:**

**Certifier:**

**Certification Statement:**

**Signatures:**

**Driver:**

**Truck:**

**Driver's License No.:**

**Registration No.:**

**Hazardous Material Handling Number:**

**DOT:**

**EXHIBIT MATERIALS:**

**Dimensions:**

**Net Weight:**

**Stability Data:**

**Routing:**

**Handling:**

**Special Instructions:**

**Temperature:**

**Special Handling:**

**Special Precautions:**

**Special Equipment:**

**Additional Information:**

**Emergency Information:**

**Emergency Phone:**

**Release:**

**Authorized Receiver:**

**Date:**

**Signature:**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 19 DFC 2012

R/L# 2824

M-6

IND81D-070019  11 PTS
IND86H-070622  3 PTS
IND87D-070450  1 PT
IND81D-070015  4 PTS
IND81D-070020  3 PTS
IND83F-070274  1 PT
IND81G-070061  2 PTS
IND84K-070452  3 PTS
IND84L-070454  4 PTS
IND82D-070110  2 PTS
IND82L-070219  5 PTS
IND83M-070322  2 PTS
IND81D-070015  1 PT (6X120)

41 PTS WITH 6 FB @140 LBS PER DRUM
1 PT WITH 6 FD @ 120 LBS PER DRUM

TOTAL 35,160

LIONEL KOONS

EXPLO SYSTEMS INC
**HPLC PROPELLANT STABILITY REPORT**

Lot Number: IND87D070450  
D533 / M6 propellant

Date of analysis:  
Date: 23 AUG 2010

**Other Information**  
Solvent:  
Sample Data:  
#1  0.5000 g  100 ml  ACN

**Standards (ERG-006)**

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<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>%</th>
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</thead>
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<td>Time</td>
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<td></td>
<td>Area 1</td>
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<td>0.000</td>
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</table>

Avg. % Stabilizer for Lot: 0.651

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Average Total Stabilizers**  
0.65 %

**Analyst Signature**  
Stable: YES  
Unstable: 

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070452  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 13 AUGUST 2012

### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
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<td></td>
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</tbody>
</table>

Avg. % Stabilizer for Lot: **0.622**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.62 %

### Analyst Signature

Dickerson

### Lab. Supervisor Signature

Dickerson

### Comments

**Stable**  
**YES**  
**Unstable**

**CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84L070454  
**D533 / M6 propellant**

**Date of analysis:** 4 MAY 2012

### Other Information
- **Sample Data**
  - #1  
  - Solvent:  
    - 0.50 g  
    - 100 ml  
    - ACN

### Standards (ERG-006)

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<tr>
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<td>ppm</td>
<td>Time</td>
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### Avg. % Stabilizer for Lot: 0.521

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- **Takisha Dickerson**

### Analyst Signature

### Stable
- **YES**

### Comments
- **CATEGORY:** A

### Actions to be Taken

---

019399

EXP_001033
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322
**D533 / M6 propellant**

**Date of analysis:** Date: 12 APR 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
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</table>

| M6 Propellant |

## Standards (ERG-006)

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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg Area 1</th>
<th>Sample # Intg Area %</th>
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<td>2,4-DNDPA</td>
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Avg. % Stabilizer for Lot = **2.112**

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson

**Avg. Tot. Stabilizers:** **2.11 %**

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 27 JULY 2011

### Other Information

- **M6 Propellant**
- **Sample Data**  
  - **Solvent:** #1, 0.50 g, 100 ml, ACN

### Standards (ERG-006)

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<tr>
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<tr>
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**Avg. % Stabilizer for Lot:** 0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

- **Takisha Dickerson**

### Comments

- **Stable:** YES  
  - **Unstable:**

- **Comments:** CATEGORY: A

### Actions to be Taken

EXP_001035

019401
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**D533 / M6 propellant**

**Date of analysis:** Date: 27 JULY 2011

### Other Information

- **Sample Data**
  - Sample #1
  - 0.50 g
  - 100 ml
  - ACN

### Standards (ERG-006)

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<th>Intg.</th>
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<td>7.842</td>
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**Avg. % Stabilizer for Lot:** 0.415

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42 %

**Analyst Signature**

**Stable**  
**Unstable**

**Comments**

- **CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

**Form #158**  
**Original Print Date:** 07/19/2010  
**EXP_001036**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81G0700061  D533 / M6 propellant
Date of analysis:  Date: 12 JULY 2011

Other Information
M6 Propellant

Sample Data
Date: 12 JULY 2011
#1  0.50 g  100 ml  ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
</tr>
<tr>
<td></td>
<td>ppm</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

0.421

Avg. % Stabilizer for Lot 0.421

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst Mike Kile

Avg. Tot. Stabilizers 0.42%

Analyst Signature
Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

## Lot Number:
IND81D070020

## D533 / M6 propellant

## Date of analysis:
Date: 10 Feb 2012

### Solvent Information
- **Sample Data**: #1
- **Weight**: 0.50 g
- **Volume**: 100 ml
- **ACN**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.868</td>
<td>53.7</td>
<td>398.1</td>
<td>0.741</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.292</td>
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<td>0.000</td>
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<td>2,2' DNDPA</td>
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</tr>
<tr>
<td>4NDDPA</td>
<td>50.0</td>
<td>8.309</td>
<td>1616.5</td>
<td>50</td>
<td>0.003</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.362</td>
<td>2912</td>
<td>113.3</td>
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<td>355.2</td>
<td>0.000</td>
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## Avg. % Stabilizer for Lot: 0.797

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst
- **Mike Kile**

## Analyst Signature

## Avg. Tot. Stabilizers: 0.80%

## Stable: YES | Unstable

## Comments
- CATEGORY: A

## Actions to be Taken
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND81D070015  
**Date of analysis:**  
**Date:** 20 OCT 2010  
**Other Information:**  
**Solvent:** #1 0.5000 g 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Sample Data</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>5.024</td>
<td>281.6</td>
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<td>2,4’ DNDPA</td>
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<td>329</td>
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<tr>
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<td>329.9</td>
<td>158.8</td>
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**Avg. % Stabilizer for Lot**  

0.854

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst 

**Kisha Dickerson**  
**Avg. Tot. Stabilizers**  

0.85 %

### Analyst Signature

**Stable**  

YES | Unstable

### Comments

CATEGORY: A

### Lab. Supervisor Signature

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 29 MAY 2012

### Sample Data

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<th>Solvent</th>
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</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
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### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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<tbody>
<tr>
<td>4,4’ DNDPA</td>
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<td>0</td>
<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.309

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.31 %

**Analyst Signature:**  
**Stable:** YES | **Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**  
**Actions to be Taken**
**STRAIGHT BILL OF LADING**

**NOT NEGOTIABLE**

RECEIVED, subject to the classification and tariffs in effect on the date of issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (condition and contents of packages unknown) consigned, and districted as indicated below, which carload is delivered at the carrier's discretion, subject to the delivery of the property to the named consignee or his authorized agent at the named address.

Shippers' Net 2022

<table>
<thead>
<tr>
<th>Freight Charges:</th>
<th>Collect</th>
<th>Prepaid</th>
<th>Location No.</th>
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**Consignment**

<table>
<thead>
<tr>
<th>Consignee Name</th>
<th>Fed. No.</th>
<th>Exp. Date</th>
<th>Exp. Date</th>
<th>Customer No.</th>
</tr>
</thead>
</table>

**Charge Account of**

Customer P.O. No. and Ref. No.

| UN0151, Powder, Smokeless, 1.3C, PG II | #112 | EXPLOSIVES 1.3 |

This is to certify that the above named material is properly classified, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

I have been offered and have accepted the shipment as reported in Form 49 CFR Shipper's Form 172. I have received the above goods in apparent good order and condition.

DOT Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057 (Shipper)

I have been offered and have accepted the shipment as reported in Form 49 CFR Shipper's Form 172. I have received the above goods in apparent good order and condition.

By

AUDIENCE HILGEN

EXP_001041
AUSTIN POWDER PACKING LIST

SHIPPMENT DATE 18 DEC 2012

B/L# 2822

M-6

IND88F-070964 3 PTS
IND811D-070019 4 PTS
IND84C-070331 3 PT
IND87B-070678 4 PTS
IND85B-070507 8 PTS
IND86H-070622 3 PTS
IND87G-070450 2 PTS
IND84G-070326 2 PTS
IND88F-070969 9 PTS
IND84A-070323 1 PT
IND83F-070274 1 PT
IND81G-070022 1 PT
IND81D-070020 1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280

LIONEL Koons

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88J070969  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 24 OCT 2012

## Sample Data

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<tr>
<th>Sample</th>
<th>Weight</th>
<th>Volume</th>
<th>Solvent</th>
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</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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<tbody>
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<td>4,4’ DNDPA</td>
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<td>11.01</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.732</td>
<td>1511.1</td>
<td>286</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.564

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Analyst:** MIKE KILE  
**Analyst Signature:** [Signature]

**Avg. Tot. Stabilizers:** 0.56%

<table>
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<tr>
<th>Stabilizer</th>
<th>Stable</th>
<th>Unstable</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>Unstable</td>
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</table>

**Comments:**  
**CATEGORY:** A

**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88F070964  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 20 JAN 2012  
**Sample Data**  
**Solvent**  
**Sample #**  
**Standards (ERG-006)**

<table>
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<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>Conc.</th>
<th>Intg.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
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<td>0.632</td>
<td>146.8</td>
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<td>4.775</td>
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<td>6.709</td>
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<td>8.119</td>
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<td>870.3</td>
<td>0.000</td>
<td></td>
<td></td>
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</table>

- Avg. % Stabilizer for Lot: 0.331

0.30% or more is Stability Code A  
0.20% to 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.33 %

**Analyst Signature:**  
**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

### Other Information
- Sample Data: 
  - Sample #1: 0.5000 g, 100 ml, ACN

### Standards (ERG-006)

<table>
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<th>Stabilizer</th>
<th>Concentration (ppm)</th>
<th>Ret Time (min)</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0</td>
<td>0</td>
<td></td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>4.884</td>
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<tr>
<td>4NDPA</td>
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<td>0.000</td>
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<td>75.0</td>
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<td>1080.5</td>
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### Avg. % Stabilizer for Lot
- 0.651

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.65 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**
- CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87BY70678  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 OCTOBER 2011

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
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</tbody>
</table>

**M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Sample # Intg. %</th>
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<td>50.0</td>
<td>0.86</td>
<td>108.3</td>
<td>465.30</td>
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<tr>
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<td>50.0</td>
<td>3.439</td>
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<tr>
<td>2,2’ DNDPA</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.185</td>
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<td>50.0</td>
<td>10.427</td>
<td>2895.4</td>
<td>343.7</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.954</td>
<td>5562.6</td>
<td>261.2</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.798</td>
<td>1360.9</td>
<td>0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.463

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.46 %  
**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
019412  
EXP_001046
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85B070507  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 16 JULY 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.871</td>
<td>70.6</td>
<td>459.1</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.368</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.103</td>
<td>1888.6</td>
<td>22961</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>7.516</td>
<td>1021.7</td>
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<td>2NDPA</td>
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<tr>
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<td>11.561</td>
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<td>75.0</td>
<td>12.367</td>
<td>1376.5</td>
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**Avg. % Stabilizer for Lot:** 0.686

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

**Takisha Dickerson**  
**Avg. Tot. Stabilizers:** 0.69 %

**Analyst Signature:**

**Lab. Supervisor Signature:**

**Stable:** YES  |  **Unstable:**

**Comments:**  
**CATEGORY:** A

**Actions to be Taken:**

---

019413  
EXP_001047
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 21 DEC 2011

### Other Information

- **Sample Data:**
  - Solvent: ACN
  - Sample #1:
    - 0.50 g
    - 100 ml

### Standards (ERG-006)

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<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret. (Time)</th>
<th>Intg. (Area 1)</th>
<th>Intg. (Area)</th>
<th>Conc. (%)</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
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<td>675.2</td>
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<td>3.298</td>
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<td>4.953</td>
<td>951.5</td>
<td>224969</td>
<td>0.000</td>
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<td>2,4' DNDPA</td>
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<tr>
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<td>8.218</td>
<td>1880.4</td>
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<td>9.339</td>
<td>3292.9</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.073</td>
<td>1512.2</td>
<td>0</td>
<td>0.000</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.40%

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.40 %

**Analyst Signature**

**Stable**  
**Comments:**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:** Date: 3 MAY 2012

**Sample Data**  
Sample #1  
0.50 g  
100 ml  
ACN

**Standards (ERG-006) & Sample #**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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</thead>
<tbody>
<tr>
<td>ppm Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,4'DNDA</td>
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<td>0.867</td>
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<td></td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
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<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.364

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.36 %

**Analyst Signature:**  
**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Lab. Supervisor Signature:**  
**Actions to be Taken:**
# HPLC Propellant Stability Report

**Lot Number:** IND84C070331  
**Date of Analysis:**  
**Other Information:** M6 Propellant  
**Sample Data:**  
- Sample: #1  
- Mass: 0.5000 g  
- Solvent: 100 ml ACN  

## Standards (ERG-006)

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<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret.</th>
<th>Int.</th>
<th>Area 1</th>
<th>Int.</th>
<th>Conc.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td></td>
<td></td>
<td>Area</td>
<td>%</td>
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<td>4,4' DNDPA</td>
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<td>50.0</td>
<td>12.024</td>
<td>1113.3</td>
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<td>522</td>
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<td>16.167</td>
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<td>299.3</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.495

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50 %  
**Analyst Signature:** Stable YES Unstable  
**Comments:** CATEGORY: A  
**Lab. Supervisor Signature:** Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 27 JULY 2011

## Other Information

**M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>622.1</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
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<td>0</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
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<td>22209</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.842</td>
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<tr>
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<td>48.5</td>
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<td>2956.2</td>
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## Sample Data

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
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</tbody>
</table>

## Analyst

**Takishe Dickerson**

### Analyst Signature

**Avg. Tot. Stabilizers:** 0.59 %

### Comments

**CATEGORY:** A

### Actions to be Taken

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**  
**Date of analysis:** Date: 29 MAY 2012

**Solvent:**  
Sample Data  
#1  
0.50 g  
100 ml  
ACN

**Sample #**

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<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>ppm Time Area 1</td>
<td>Area %</td>
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<td></td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0 0.88 235.9</td>
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</tr>
<tr>
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<td>50.0 3.398 913.2</td>
<td>0 0.000</td>
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</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0 5.133 1007.2</td>
<td>37577 0.000</td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0 7.409 1002.4</td>
<td>0 0.000</td>
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</tr>
<tr>
<td>4NDPA</td>
<td>50.0 8.917 1612.8</td>
<td>186.9 0.012</td>
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</tr>
<tr>
<td>2NDPA</td>
<td>50.0 10.112 2882.2</td>
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<td>200.0 11.607 5642.3</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0 12.414 1351.4</td>
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**Avg. % Stabilizer for Lot:** 0.309

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.31%

**Analyst Signature:** Stable YES Unstable

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:** Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 10 Feb 2012

**Other Information**  
M6 Propellant

## Sample Data

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<tr>
<th>Sample #</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
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| Standards (ERG-006) | | |

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
</tr>
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<tbody>
<tr>
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<td>50.0</td>
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<td>50.0</td>
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<td>8.309</td>
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<td>2NDPA</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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<table>
<thead>
<tr>
<th>Intg. Area</th>
<th>%</th>
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<td>22071</td>
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<tr>
<td>666</td>
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<tr>
<td>355.2</td>
<td>0.000</td>
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Avg. % Stabilizer for Lot: 0.797

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

<table>
<thead>
<tr>
<th>Analyst</th>
<th>Mike Kile</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Analyst Signature</th>
<th>Avg. Tot. Stabilizers</th>
<th>Stable</th>
<th>Unstable</th>
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</thead>
<tbody>
<tr>
<td></td>
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<table>
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<tr>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>CATEGORY: A</td>
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</table>

<table>
<thead>
<tr>
<th>Lab. Supervisor Signature</th>
<th>Actions to be Taken</th>
</tr>
</thead>
</table>
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:** 23 AUG 2010

**Sample Data**  
- **Solvent:** ACN  
- **Sample #1:** 0.5000 g  
- **Volume:** 100 ml

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (s)</th>
<th>Intg. Area 1 (a.u.)</th>
<th>Intg. Area 2 (a.u.)</th>
<th>Conc. Area %</th>
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<td>0.000</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
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<td>0</td>
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<td>50.0</td>
<td>11213</td>
<td>1155.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>11899</td>
<td>750.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12536</td>
<td>1566</td>
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<td>0.000</td>
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<td>200.0</td>
<td>13934</td>
<td>4151.3</td>
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<tr>
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<td>75.0</td>
<td>14875</td>
<td>1080.5</td>
<td>451.1</td>
<td>0.063</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.237

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.24%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001054
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, in apparent good order, except as noted (content and condition of contents of packages unknown) consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed that to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading at forth (3) in Uniform Freight Classification in effect on the date hereinafter.
If this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff it is a motor carrier shipment.
Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, as term in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted by himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Mindem, LA 71055

At

By

Freight Charges: Collect
Prepaid

Location No.

Consignee:

Consignee Address:
(Mail or Street Address of Consignee — For purposes of notification only)

Fed Lic.
Exp. Date
State
Exp. Date
State Lic.
Customer No.

Route

Charge Account No.

Customer P.O. No.

Rel. No.

UN0161, Powder, Smokeless, 1.3C, PG II

#112

EXPLORIVES 1.3

Thrd No.

112.5

112.5

112.5

Trailer No.

112.5

112.5

112.5

Mileage

Total

246 1G FD @ 140

246 1G FD @ 120

Basis

Weight

35,160

Net Weight

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are
according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTRIC — DAY OR NIGHT
IN THE USA CALL 800-424-0300
IN CANADA (ERT: 1-800-465-0300) 800-581-3838 ELSEWHERE CALL (702) 827-3887

I have been offered placard(s) identifying the shipment as specified in 49CFR Subpart F

Port

Par

Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057
(Shipper)

Received By:

AUTHORIZED RECEIVER

EXP_001055
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 19 DEC 2012

B/L# 282J

M-6

IND81D-070019  11 PTS
IND86M-070622  3 PTS
IND87D-070450  1 PT
IND81D-070015  4 PTS
IND81D-070020  3 PTS
IND83F-070274  1 PT
IND81G-070061  2 PTS
IND84K-070452  3 PTS
IND81F-070454  4 PTS
IND82D-070110  2 PTS
IND82L-070219  5 PTS
IND83M-070322  2 PTS
IND81D-070015  1 PT (6X120)

41 PTS WITH 6 FB @140 LBS PER DRUM
1 PT WITH 6 FD @ 120 LBS PER DRUM

TOTAL 35,160

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 AUG 2010

**Other Information**

- **M6 Propellant**
- **Sample Data**
  - Sample #1
  - Solvent: ACN
  - Amount: 0.5000 g
  - Volume: 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<td>50.0</td>
<td></td>
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<td>0.000</td>
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<td>75.0</td>
<td>14.875</td>
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**Avg. % Stabilizer for Lot:** 0.651

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.65 %

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Actions to be Taken**

---

Form #15R  
Original Print Date: 07/10/2010  
EXP_001057
**HPLC PROPELLANT STABILITY REPORT**

Lot Number: IND84K070454  
D533 / M6 propellant  

**Date of analysis:** Date: 21 SEP 2010  

**Other Information**  
M6 Propellant  

**Sample Data**  
Sample #1  
0.5000 g  
100 ml ACN  

### Standards (ERG-006)

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<tr>
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<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>10.409</td>
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<td>75.0</td>
<td>16.167</td>
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<td>274.3</td>
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Avg. % Stabilizer for Lot: 0.714

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  

**Avg. Tot. Stabilizers:** 0.71 %

**Stable:** YES  
**Unstable:**

**Comments**  
 CATEGORY: A

**Lab. Supervisor Signature**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070452  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 13 AUGUST 2012

## Other Information

M6 Propellant

## Sample Data

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<tr>
<th>Solvent</th>
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<tr>
<td></td>
<td>100 ml</td>
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<tr>
<td></td>
<td>ACN</td>
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</tbody>
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## Standards (ERG-006)

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### Avg. % Stabilizer for Lot

<table>
<thead>
<tr>
<th>Avg. % Stabilizer for Lot</th>
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</thead>
<tbody>
<tr>
<td>0.622</td>
</tr>
</tbody>
</table>

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Takisha Dickerson**  
**Signature**

## Analyst Signature

**Takisha Dickerson**

## Lab. Supervisor Signature

### Stable

**YES**

### Unstable

### Comments

**CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

**Date of analysis:**

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Date: 12 APR 2012</th>
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</thead>
<tbody>
<tr>
<td>#1</td>
<td>Solvent</td>
</tr>
<tr>
<td>0.50 g</td>
<td>ACN</td>
</tr>
<tr>
<td>100 ml</td>
<td></td>
</tr>
</tbody>
</table>

**Standards (ERG-006)**

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<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>4,4'DNDPA</td>
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<td>0.882</td>
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<td>566.5</td>
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<td>50.0</td>
<td>3.244</td>
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<td>50.0</td>
<td>6.74</td>
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<td>9.091</td>
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<td>10.394</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
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<td>0.000</td>
<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 2.112

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.11 %

**Analyst Signature**

**Stable:** YES   **Unstable:**

**Comments**

**Lab. Supervisor Signature**

**Actions to be Taken**

019426  
EXP_001060
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 27 JULY 2011

**Other Information**  
**Sample Data**  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-008)

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<th>Stabilizer</th>
<th>Conc. Ret</th>
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<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
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<td>622.1</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
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<td>0.000</td>
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<td>2,2' DNDPA</td>
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**Avg. % Stabilizer for Lot**  
0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson  
**Avg. Tot. Stabilizers**  
0.59 %

**Analyst Signature**  
**Stable**  
YES  
**Unstable**  
**Comments**  
**CATEGORY:** A  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**Date of analysis:** Date: 27 JULY 2011  
**DS35 / M6 propellant**

### Other Information

**Sample Data**  
- Sample #1: 0.50 g, 100 ml, ACN  
- **Solvent**

### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
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<th>Intg. %</th>
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<tr>
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<td>0.694</td>
<td>112.8</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
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<td>75.0</td>
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<td>1385.2</td>
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**Avg. % Stabilizer for Lot:** 0.415

- **0.30% or more is Stability Code A**  
- **0.20% - 0.29% is Stability Code C**  
- **Less than 0.20% is Stability Code D**

### Analyst

- **Mike Kile**  
- **Avg. Tot. Stabilizers:** 0.42 %

### Analyst Signature

- Stable: **YES** Unstable: ****

### Comments

- **CATEGORY:** A

### Actions to be Taken

---

**Form #158**  
**Original Print Date:** 07/19/2010  
**EXP_001062**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81G070061  
D533 / M6 propellant

Date of analysis:  
Date: 12 JULY 2011

Other Information
M6 Propellant  
Sample Data  
Solvent  
#1  
0.50 g  
100 ml  
ACN

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<td>ppm</td>
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<tr>
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<td>50.0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot  
0.421

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

Analyst Mike Kile  
Avg. Tot. Stabilizers 0.42 %

Analyst Signature  
Stable YES Unstable

Lab. Supervisor Signature  
Comments CATEGORY: A

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number: IND81D070020</th>
<th>D533 / M6 propellant</th>
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<tbody>
<tr>
<td>Date of analysis:</td>
<td>Date: 10 Feb 2012</td>
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<tr>
<td>Other Information</td>
<td></td>
</tr>
<tr>
<td>M6 Propellant</td>
<td></td>
</tr>
<tr>
<td>Sample Data</td>
<td></td>
</tr>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml ACN</td>
</tr>
<tr>
<td>Solvent</td>
<td></td>
</tr>
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</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.888</td>
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<tr>
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<td>50.0</td>
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<td>839.4</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>6.943</td>
<td>1003.3</td>
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<td>50.0</td>
<td>8.309</td>
<td>1618.5</td>
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<td>9.362</td>
<td>2912</td>
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<td>DPA</td>
<td>200.0</td>
<td>10.749</td>
<td>5497.2</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.362</td>
<td>1284.1</td>
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<table>
<thead>
<tr>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>0</td>
<td>0</td>
<td>0.000</td>
</tr>
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<td>22071</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>0</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>50</td>
<td>0</td>
<td>0.003</td>
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<tr>
<td>113.3</td>
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<td>0.004</td>
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<td>668</td>
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<tr>
<td>355.2</td>
<td>0</td>
<td>0.000</td>
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</table>

Avg. % Stabilizer for Lot: **0.797**

- 0.30% or more is Stability Code A
- 0.29% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst**: Mike Kile

**Avg. Tot. Stabilizers**: **0.80 %**

**Stable**: YES  |  Unstable

**Comments**: CATEGORY: **A**

**Actions to be Taken**: **null**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 OCT 2010

### Other Information

**Sample Data**  
**Solvent**

| #1 | 0.5000 g | 100 ml | ACN |

### M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc.</td>
</tr>
<tr>
<td></td>
<td>ppm</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  
0.854

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

**Kisha Dickerson**

**Avg. Tot. Stabilizers**  
0.85 %

### Comments

**Stable** YES Unstable

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPellant STABILITY REPORT

## Lot Number: IND81D070019

**D533 / M6 propellant**

**Date of analysis:**

**Date:** 29 MAY 2012

## Other Information

**Sample Data**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg Area 1</th>
<th>Intg Area</th>
<th>Conc %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>500.0</td>
<td>0.88</td>
<td>235.9</td>
<td>525.7</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>500.0</td>
<td>3.398</td>
<td>913.2</td>
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<td>0.000</td>
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<tr>
<td>2,2'-DNDPA</td>
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<td>5.133</td>
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<td>37577</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>500.0</td>
<td>7.409</td>
<td>1002.4</td>
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<td>0.000</td>
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<td>4NDPA</td>
<td>500.0</td>
<td>8.917</td>
<td>1612.8</td>
<td>188.9</td>
<td>0.012</td>
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<tr>
<td>2NDPA</td>
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<td>10.112</td>
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<td>200.0</td>
<td>11.607</td>
<td>5642.3</td>
<td>917.9</td>
<td>0.065</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.414</td>
<td>1351.4</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

## Analysis

**Avg. % Stabilizer for Lot:** 0.309

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson

**Average Total Stabilizers:** 0.31%

**Comments:**

**CATEGORY:** A

**Actions to be Taken:**

**Stable:** YES

**Unstable:**

**Analyst Signature:**

**Comments:**

**Lab. Supervisor Signature:**

**Comments:**

**Actions to be Taken:**
STRAIGHT BILL OF LADING

Shippers Name: Expro Systems, Inc.
Address: 1660 Java Road, Minden, LA 71055.

At: [Postal Address]

Consignee: [Postal Address]

Destination: [Postal Address]

Packing List: [Details]

Charge Account: [Details]

Proper Shipping Name: UN0191, Powder, Smokeless, 1.3C, PG-II

Description: 744-CAR-11

Weight: 2170.6 lbs

Exemption Number: #112

Packing Group: III

Hazard Class: Explosives 3.0

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature: [Signatory]

Emergency Phone Numbers:
- DOT: 800-321-2876
- ICC: 1-800-391-1203

I have been afforded placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above placards in apparent good order and condition.

Received by: [Signatory]

Date: [Date]

Authorized Carrier:

Authorized by: [Signatory]

Date: [Date]

Hazardous Material Handling Number: [Number]

Local Federal Explosives License No: 51-LA-119-20-14-00057

(Shippers)

019433
AUSTIN POWDER PACKING LIST

SHIPPMENT DATE 12 DEC 2012

B/L# 2819 TRL 70267

M-6

IND84A-070323  2 PTS
IND82D-070110  2 PTS
IND82L-070219  2 PTS
IND83M-070322  2 PTS
IND86M-070673  4 PTS
IND82L-070178  2 PTS
IND85B-070507  1 PT
IND83L-070321  1 P1
IND84H-070443  3 PTS
IND84H-070442  2 PTS
IND81D-070015  6 PTS
IND89D-070039  1 PT
IND87E-070713  2 PTS
IND87B-070680  1 PT
IND84M-070640  1 PT
IND85C-070513  3 PTS
IND85L-070599  1 PT
IND81G-070061  1 PT
IND85F-070597  2 PTS
IND87B-070678  1 PT
IND88E-070965  1 PT
IND85F-070587  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280

LIONEL KOOBS

FXPLO SYSTEMS INC
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88E070963  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 25 AUG 2010

### Other Information
- **Sample Data**
  - Sample #1: 0.5000 g, 100 ml, ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td></td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td></td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
<td>1809.7</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4886.9</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1298.7</td>
<td></td>
</tr>
</tbody>
</table>

### Results
- **Avg. % Stabilizer for Lot:** 0.985

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

### Analyst
- **Kisha Dickerson**

### Analyst Signature

#### Comments
- **CATEGORY:** A
- **Actions to be Taken**

**Avg. Tot. Stabilizers:** 0.98 %

**Stable:** YES  
**Unstable:**

**Form #158**

**Original Print Date:** 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87E070713  
**D533 / M6 propellant**

**Date of analysis:** Date: 4 Sep 2012

### Other Information

- Sample Data: #1 0.50 g 100 ml ACN
- Solvent: ACN

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
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<td>189.8</td>
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<tr>
<td>2,4-DNDA</td>
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<td>3.418</td>
<td>914.3</td>
<td>0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
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<tr>
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</tr>
<tr>
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<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
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</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.447

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

- **Analyst:** Mike Kile
- **Avg. Tot. Stabilizers:** 0.45%
- **Stable:** YES
- **Unstable:**

### Comments

**CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87BY70678  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 OCTOBER 2011

**Other Information**  
Sample Data  
Solvent  
#1  
0.50 g  
100 ml  
ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot  
0.463

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.46 %

**Analyst Signature**  
Stable YES Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**

**Date of analysis:** Date: 7 FEB 2012

**Sample Data**<br>
| Solvent | #1 | 0.50 g | 100 ml | ACN |

**Other Information**

**Sample #**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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</thead>
<tbody>
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<td>0.000</td>
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<td></td>
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<td>50.0</td>
<td>8.642</td>
<td>1532.1</td>
<td>67.5</td>
<td>0.004</td>
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<tr>
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<td>2784.7</td>
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<td>1363.1</td>
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<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  

0.965

**Analyst**  

TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  

0.97 %

**Analyst Signature**

**Stable**  

YES

**Unstable**

**Comments**

CATEGORY: A

**Actions to be Taken**

**Form #158**

Original Print Date: 07/19/2010  

EXP_001072
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070587  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 25 AUG 2010

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>1821.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>0</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
<td>14427.7</td>
</tr>
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<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td>0</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
<td>1809.7</td>
<td>0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4888.9</td>
<td>225</td>
</tr>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
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<table>
<thead>
<tr>
<th>Sample #</th>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1262</td>
<td>1.262</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot: 1.262

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

- **Kisha Dickerson**

## Avg. Tot. Stabilizers

- 1.26%

## Analyst Signature

**Stable**

## Lab. Supervisor Signature

** CATEGORY: A**

## Actions to be Taken
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND85B070507
D533 / M6 propellant

Date of analysis: 16 JULY 2012

Other
Information
M6 Propellant

Sample Data
#1 0.50 g 100 ml ACN

Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDDA</td>
<td>50.0 0.871 70.6</td>
<td>459.1 0.650</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4'-DNDDA</td>
<td>50.0 3.368 934.1</td>
<td>0 0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDDA</td>
<td>50.0 5.103 1888.6</td>
<td>22961 0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4'-DNDDA</td>
<td>50.0 7.516 1021.7</td>
<td>0 0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 8.938 1656.1</td>
<td>136.9 0.008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0 10.131 2970.1</td>
<td>108.4 0.004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 11.561 5887.3</td>
<td>342.8 0.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 12.367 1376.5</td>
<td>0 0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

Avg. % Stabilizer for Lot 0.686

Analyst: Takisha Dickerson

Avg. Tot. Stabilizers 0.69 %

Analyst Signature

Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 21 DEC 2011

**Other Information**  
**Sample Data**  
#1  
0.50 g  
100 ml  
ACN

**M6 Propellant**

## Standards (ERS-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.67</td>
<td>192.9</td>
<td>675.2</td>
<td>0.350</td>
</tr>
<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>3.298</td>
<td>1077.6</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>4.953</td>
<td>951.5</td>
<td>22469</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>6.749</td>
<td>1136.2</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.218</td>
<td>1880.4</td>
<td>46.5</td>
<td>0.002</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.339</td>
<td>3292.9</td>
<td>89.5</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.48</td>
<td>6310.2</td>
<td>733.6</td>
<td>0.047</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.073</td>
<td>1512.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.402

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.40%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

019441  
EXP_001075
## HPLC PROPPELLANT STABILITY REPORT

### Lot Number: IND83M070322  
### D533 / M6 propellant

#### Date of analysis: 12 APR 2012

#### Other Information
- Sample Data: #1  
- Solvent: 0.50 g, 100 ml, ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret. ppm</th>
<th>Intg. Time Area 1</th>
<th>Area %</th>
<th>Intg. Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>28.4</td>
<td>566.5</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.244</td>
<td>978.3</td>
<td>0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>4.803</td>
<td>3426.7</td>
<td>22442</td>
</tr>
<tr>
<td>2,4'-DNPA</td>
<td>50.0</td>
<td>6.74</td>
<td>1061.1</td>
<td>499.4</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.012</td>
<td>1726.9</td>
<td>66.2</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.091</td>
<td>3682.4</td>
<td>113.4</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.394</td>
<td>6185.4</td>
<td>978.3</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>10.968</td>
<td>1530.7</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Avg. % Stabilizer for Lot: 2.112

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- Kisha Dickerson

### Avg. Tot. Stabilizers
- Stable: YES  
- Unstable: No

### Comments
- CATEGORY: A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82L070178  
**D533 / M6 propellant**

**Date of analysis:** Date: 1 FEB 2011

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.158</td>
<td>1116</td>
<td>1943.1</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>2586.9</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.967</td>
<td>1694.7</td>
<td>97.6</td>
</tr>
<tr>
<td>2,4 DNDPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>145.3</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
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</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>13.939</td>
<td>5852.1</td>
<td>388.6</td>
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<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
<td>361.4</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>365.7</td>
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</tbody>
</table>

## Analyst

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.45%

**Analyst Signature:** Stable YES Unstable

**Lab. Supervisor Signature:**  
**Comments:** CATEGORY: A

**Actions to be Taken:**

---

**Form #158**  
**Original Print Date:** 07/19/2010

---

**EXP_001077**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110

**D533 / M6 propellant**

**Date of analysis:** 27 JULY 2011

**Sample Data**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample</th>
<th>Conc. Ret</th>
<th>Intg. Area</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
<td></td>
</tr>
</tbody>
</table>

**M6 Propellant**

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>4,4′ DNDPA</td>
<td>50.0</td>
<td>0.694</td>
</tr>
<tr>
<td>2,4′-DNDPA</td>
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<td>3.477</td>
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<tr>
<td>2,2′-DNDPA</td>
<td>50.0</td>
<td>5.339</td>
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<tr>
<td>2,4′-DNPA</td>
<td>50.0</td>
<td>7.842</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.693</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
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</table>

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.388</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0.000</td>
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</tr>
<tr>
<td></td>
<td>22925</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>119.1</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td></td>
<td>134.9</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td></td>
<td>218.4</td>
<td>0.016</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.415

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile

**Avg. Tot. Stabilizers:** 0.42 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**

CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81G070061  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 12 JULY 2011  
**Other Information:** M6 Propellant

## Sample Data

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Solvent</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.71</td>
<td>111</td>
<td>358.1</td>
<td>0.323</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.475</td>
<td>1001</td>
<td>79.1</td>
<td>0.008</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.325</td>
<td>96</td>
<td>18335</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNPD</td>
<td>50.0</td>
<td>7.791</td>
<td>1061.3</td>
<td>83.2</td>
<td>0.008</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.345</td>
<td>1700.8</td>
<td>167.7</td>
<td>0.010</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.629</td>
<td>3041.2</td>
<td>330.5</td>
<td>0.011</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.152</td>
<td>5943.4</td>
<td>913.3</td>
<td>0.051</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.034</td>
<td>1443.1</td>
<td>111.8</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Average % Stabilizer for Lot: 0.421

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**Date of analysis:** 20 OCT 2010  
**Solvent:** ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Concentration (ppm)</th>
<th>Ret. Time (s)</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>5.024</td>
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<td>0.839</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>10.59</td>
<td>329</td>
<td>0</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>12.176</td>
<td>376.1</td>
<td>0</td>
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<td>2,4'-DNDPA</td>
<td>50.0</td>
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<td>35.7</td>
<td>0.013</td>
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<td>N-NDPA</td>
<td>50.0</td>
<td>13.632</td>
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<td>0</td>
<td>0.000</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>14.943</td>
<td>1788.8</td>
<td>34.8</td>
<td>0.002</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.114</td>
<td>286</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>19.917</td>
<td>329.9</td>
<td>158.8</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.854

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

**Kisha Dickerson**

**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.85%

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
# STRAIGHT BILL OF LADING

## Received

This property described below is in transit to the consignee, except as noted. The consignee agrees that the property will be delivered at the time and place specified in the bill of lading. The consignee agrees to pay for the property at the time and place specified in the bill of lading. The consignee agrees to pay for the property at the time and place specified in the bill of lading.

## Shipment Details

- **Shipper:** Explo Systems, Inc.  
  1603 Java Road  
  Minden, LA 71055

- **Freight Charges:** Collect

- **Consignee:** Exp. Date 3/1/5

- **Route:** 1/25/13

- **P.O. No.:** 216-09-6

- **Location No.:** 221569

## Hazardous Materials

- **UN0161, Powder, Smokeless, 1-3C, PG II**

- **Exemption Code:** EXPLOSIVES 1.3

## Signature

**Shipment Number:** 25141

**Bill of Lading Number:** 0560

**Proper Shipping Name and Hazard Class:** UN0161, Powder, Smokeless, 1-3C, PG II

**Returned No. of Units:** #112

**Returned No. of Packages:** 0

**Exemption Code:** EXPLOSIVES 1.3

**Placards Applied to: **

**Type:** Explosive

**Description:** Smokeless Powder

**Weight:** 32.25 lbs.

**Net Explosive Weight:** 32.25 lbs.

**Date:** 1/25/13

**Time:** 1:30 PM

---

**In the event of Chemical, Emergency, Spill, Leak, Fire, Exposure or Accident, Call Chemtura's TACTICAL MUNITIONS RESPONSE CENTER at 800-424-9200 in the USA and 604-665-2000 in Canada.**

---

**Authorized Receiver:**

**Received By:** U CONSIGNEE & O CARRIER

**Date:** 1/25/13

**Authorized Receiver:**

**Date:** 1/25/13

---

**I have been informed and agree to comply with the provisions of 49CFR Section 172 of Part 172. I have received the above goods in apparent good order and condition.**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 25 JAN 2013

B/L# 2841 TRL 41067

M-6

IND86E-070616   25 PTS
IND85F-070587    2 PTS
IND81D-070015    4 PTS
IND85C-070512    7 PTS
IND83M-070322    2 PTS
IND81D-070020    1 PT
IND81G-070061    2 PTS

43 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 36,120 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC Propellant Stability Report

**Lot Number:** IND86E070616 | **D533 / M6 propellant**

**Date of analysis:** Date: 19 NOV 2010

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
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<td>654.4</td>
<td>0.482</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>7.635</td>
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<td>13022.2</td>
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<td>2,4’ DNDPA</td>
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<tr>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>15.161</td>
<td>1164.1</td>
<td></td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
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<td>221.2</td>
<td>0.022</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.504

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst

**Kisha Dickerson**

**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**

**Stable:** YES | Unstable

## Comments

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**D533 / M6 propellant**  
**Date of analysis:** Date: 10 AUGUST 2012

### Other Information

**Sample Data**  
**Solvent**  
#1  0.50 g  100 ml  ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>8.8</td>
<td>112.9</td>
<td>1.283</td>
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<td>50.0</td>
<td>3.343</td>
<td>910.9</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.034</td>
<td>3858.6</td>
<td>22576</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.363</td>
<td>1013.2</td>
<td>0</td>
<td>0.000</td>
</tr>
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<td>4NDPA</td>
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<td>1647.3</td>
<td>59.7</td>
<td>0.004</td>
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<td>50.0</td>
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<td>12.173</td>
<td>1371.4</td>
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<td>0.000</td>
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</table>

### Avg. % Stabilizer for Lot

**1.339**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

Takisha Dickerson  
**Signature:** [Signature]

### Analyst Signature

**Stable:** YES  
**Unstable:**

### Comments

**CATEGORY:** A

### Lab. Supervisor Signature

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070587  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 25 AUG 2010

**Other Information**  
**Sample Data**  
- **Solvent #1:** 0.5000 g, 100 ml, ACN

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0 ppm</td>
<td>2.177</td>
<td>146.5</td>
<td>1821.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14427.7</td>
</tr>
<tr>
<td>2,4'-DNPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td>0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
<td>1809.7</td>
<td>0</td>
</tr>
<tr>
<td>DPA</td>
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<td>14.19</td>
<td>4886.9</td>
<td>225</td>
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<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
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</table>

<table>
<thead>
<tr>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intg.</td>
</tr>
<tr>
<td>Area</td>
</tr>
<tr>
<td>1.262</td>
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</tbody>
</table>

## Avg. % Stabilizer for Lot

1.262

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.26 %

**Analyst Signature**  
**Stable:** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001085
# HPLC Propellant Stability Report

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 12 APR 2012

**Other Information**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample Data #1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent</td>
<td>0.50 g 100 ml ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>28.4</td>
<td>566.5</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.244</td>
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<td>2,2'-DNDPA</td>
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<td>50.0</td>
<td>6.74</td>
<td>1061.1</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.012</td>
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<td>50.0</td>
<td>9.091</td>
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<td>113.4</td>
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<td>DPA</td>
<td>200.0</td>
<td>10.394</td>
<td>6185.4</td>
<td>978.3</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>10.968</td>
<td>1530.7</td>
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## Avg. % Stabilizer for Lot

2.112

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
2.11 %

**Analyst Signature**  
Stable YES Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
# HPLC Propellant Stability Report

**Lot Number:** IND81G070061  
**Date of analysis:** Date: 12 JULY 2011  
**D533 / M6 propellant**  
**Sample Data**  
Sample #1  
0.50 g  
100 ml  
ACN

### Standards (ERG-006)  
<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>50.0</td>
<td>9.345</td>
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<td>75.0</td>
<td>13.034</td>
<td>1443.1</td>
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</table>

Average % Stabilizer for Lot  
0.421

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Mike Kile

**Analyst Signature**

**Avg. Tot. Stabilizers**  
0.42 %

**Stable**  
YES  
**Unstable**

**Comments**  
CATEGORY:  
A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:**  
**Sample Data**  
**Solvent**  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area</th>
<th>%</th>
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<td>4,4’ DNOPA</td>
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<td>1003.3</td>
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<td>0</td>
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<tr>
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<td>113.3</td>
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<td>1264.1</td>
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<td>355.2</td>
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**Avg. % Stabilizer for Lot:** 0.797

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.80 %

**Analyst Signature**

**Stable:** YES  
**Unstable**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**Date of analysis:** Date: 20 OCT 2010  
**Other Information:** M6 Propellant  
**Sample Data**  
<table>
<thead>
<tr>
<th>Solvent</th>
<th>#1</th>
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<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

#### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Concentration %</th>
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<tbody>
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<td>4,4’-DNDPA</td>
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<td>329.9</td>
<td>158.8</td>
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</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.854

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.85 %  
**Analyst Signature**

**Comments:**  
**CATEGORY:** A

**Actions to be Taken**
CONTAINS HAZARDOUS MATERIALS

STRAIGHT BILL OF LADING

RESERVED, subject to the classification and tariffs in effect on the date of issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on the route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereof performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading St form (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or sea-freight shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Shipper’s No.: 2876

At

Freight Charges: Collect

Prepaid

Location No.

By

Shipping Date: 5/21/13

Purchase Order No.

Mail or Street Address of Consignee: -- For purposes of notification only)

Consigned to:

Fed Lic:

Exp. Date: 5/21/13

Exp. Date:

State:

State Lic.

Destination:

County:

Route:

Charge Account of: 2876

Customer P.O. No.

Rel. No.

EXPLOSIVES 1.3

In the event of an emergency, this material is a hazardous material. If in doubt, call your local health department or fire department for assistance.

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature:

Invoice No. 019456

I have been offered placards identifying this shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

I hereby acknowledge the receipt of the above goods in apparent good order and condition.

Authorized Recipient: O. Camier

Date: 5/21/13

Received By:

Local Federal Explosives License No. 5-L-A-119-20-1A-00597

(Shipper)

DOT Hazardous Material Handling Number

019456 EXP_001090
AUSTIN POWDER PACKING LIST

SHIPMENT DATE: 3 JAN 2013

B/L # 2826

M-6

IND87D-Y/0450 2 PTS
IND82L-070219 14 PTS
IND81J-070067 2 PTS
IND82D-070110 3 PTS
IND82J-070172 2 PTS
IND84A-070323 1 PT
IND88E-070963 1 PT
IND83K-070319 2 PTS
IND82H-070168 6 P/LS
IND82D-070113 1 PT
IND85C-070313 1 PT
IND82F-070274 2 P/LS
IND84K-070452 2 PTS
IND82H-070167 1 PT
IND82K-070175 1 PT
IND87B-070078 1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 5,280

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88E070963  
**D533 / M6 propellant**  
**Other Information:** M6 Propellant  
**Sample Data:**  
- Sample: #1  
- Weight: 0.5000 g  
- Volume: 100 ml  
- Solvent: ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (min)</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>1369.8</td>
<td>0.935</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>12491.2</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
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<td>9.931</td>
<td>938.5</td>
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<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
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<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
<td>1809.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4886.9</td>
<td>610.3</td>
<td>0.050</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.985

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.98 %  
**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Actions to be Taken**

**Form #158**  
**Original Print Date:** 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070452  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 13 AUGUST 2012

## Other Information

**Sample Data**  
- **Solvent:** 
  - #1: 0.50 g  
  - 100 ml  
  - ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.874</td>
<td>41.1</td>
<td>237.6</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.363</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.079</td>
<td>4556.2</td>
<td>22977</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.471</td>
<td>1125.4</td>
<td>0</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>8.907</td>
<td>1830.9</td>
<td>53.4</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.084</td>
<td>3271.2</td>
<td>114.5</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.54</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.349</td>
<td>1509.1</td>
<td>0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.622

- **0.30% or more is Stability Code A**
- **0.20% - 0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

## Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers:** 0.62 %

**Stable:** YES  
**Unstable:**

## Comments

**CATEGORY:** A

## Actions to be Taken
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  
**D533 / M6 propellant**

**Date of analysis:** Date: 21 DEC 2011

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td></td>
</tr>
</tbody>
</table>

| 4,4'-DNDPA | 50.0       | 0.67  | 192.9  |
| 2,4'-DNDPA | 50.0       | 3.298 | 1077.6 |
| 2,2'-DNDPA | 50.0       | 4.953 | 951.5  |
| 2,4'-DNDPA | 50.0       | 6.749 | 1136.2 |
| 4NDPA      | 50.0       | 8.218 | 1880.4 |
| 2NDPA      | 50.0       | 9.339 | 3292.9 |
| DPA        | 200.0      | 10.48 | 6310.2 |
| N-NitrosoDPA | 75.0     | 11.073| 1512.2 |

| Intg. | Conc. | Area | %  |

| 675.2 | 0.350 |
| 0    | 0.000 |
| 22469| 0.000 |
| 0    | 0.000 |
| 46.5 | 0.002 |
| 89.5 | 0.003 |
| 733.6| 0.047 |
| 0    | 0.000 |

**Avg. % Stabilizer for Lot:** 0.402

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.40 %  
**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

019460  
EXP_001094
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 27 JULY 2011

## Other Information

**M6 Propellant**

### Sample Data

| Solvent | #1  | 0.50 g | 100 ml | ACN |

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Time</th>
<th>Area</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.694</td>
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<td>622.1</td>
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<td>98.3</td>
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<tr>
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<td>75.0</td>
<td>13.103</td>
<td>1395.2</td>
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<td>0</td>
</tr>
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### Avg. % Stabilizer for Lot
0.590

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers** 0.59%

**Analyst Signature**

**Comments**

**Lab. Supervisor Signature**

**Category:** A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83K070319

**Date of analysis:**

**Other Information**

**M6 Propellant**

### Standards (ERG-006)

<table>
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<tbody>
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<td>4,4’ DNDPA</td>
<td>50.0</td>
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</table>

Avg. % Stabilizer for Lot: 0.694

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.69 %

**Analyst Signature**

**Stable:** YES

**Unstable**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158

Original Print Date: 07/19/2010
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 AUG 2010

#### Other Information

**M6 Propellant**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
</tr>
<tr>
<td>0.5000 g</td>
<td>100 ml</td>
</tr>
</tbody>
</table>

#### Standards (ERG-006)

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<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td>50.0</td>
<td>1</td>
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</table>

#### Avg. % Stabilizer for Lot

1.465

| 0.30% or more is Stability Code A  
| 0.20% - 0.29% is Stability Code C  
| Less than 0.20% is Stability Code D |

**Analyst** Mike Kile  
**Avg. Tot. Stabilizers** 1.46 %

**Analyst Signature**

**Stable** YES  
**Unstable**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070167  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 JAN 2012

**Sample Data**  
**Sample #1:** 0.50 g  
**Solvent:** 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td>306.2</td>
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</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
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<td>0.000</td>
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<tr>
<td>2,2’DNDPA</td>
<td>50.0</td>
<td>4.943</td>
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<td>2,4’DNDPA</td>
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<td>1103.9</td>
<td>404.1</td>
<td>0.037</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
<td>50.5</td>
<td>0.003</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
<td>79.6</td>
<td>0.003</td>
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<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.349

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.35 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND82D070113  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 JAN 2012

## Other Information

**M6 Propellant**

**Sample Data**

- **Solvent:** #1  
- **Sample:** 0.50 g  
- **Volume:** 100 ml  
- **ACN**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret (Time)</th>
<th>Intg. (Area)</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.276</td>
</tr>
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<td>0.002</td>
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<td>2,2’-DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
<td>21955</td>
<td>0.000</td>
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<tr>
<td>2,4’-DNOPA</td>
<td>50.0</td>
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<td>1103.9</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
<td>68.8</td>
<td>0.004</td>
</tr>
<tr>
<td>DPA</td>
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<td>9.513</td>
<td>3182.1</td>
<td>143.1</td>
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<td>11.669</td>
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</tbody>
</table>

## Analyst

**TAKISHA DICKERSON**

**Avg. Tot. Stabilizers:** 0.34 %

**Stable:** YES  
**Unstable:**

**Comments: CATEGORY:** A

**Actions to be Taken:**

---

**Notes:**

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D
# HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 FEB 2011

## Other Information
- Sample Data:  
  - #1 0.5000 g 100 ml ACN
- M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
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<tr>
<td>DPA</td>
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<td>15.022</td>
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<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
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</tr>
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</table>

**Avg. % Stabilizer for Lot:** 2.875

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.88%

**Comments:**
- CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82J070172  
D533 / M6 propellant

Date of analysis:  
Date: 15 July 2011

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<td>ACN</td>
</tr>
<tr>
<td>0.50 g</td>
<td>100 ml</td>
</tr>
</tbody>
</table>

**M6 Propellant**

**Standards (ERG-006)**

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. (Area)</th>
<th>Area %</th>
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<td>6225.1</td>
<td>0.026</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.037</td>
<td>1551.7</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**: 0.498

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**: Mike Kile  
**Avg. Tot. Stabilizers**: 0.50 %

**Analyst Signature**

**Stable**: YES  
**Unstable**: Stable

**Comments**: CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**Date of analysis:**  
**Other Information:** M6 Propellant

**D533 / M6 propellant**  
**Date:** 27 JULY 2011

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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<tr>
<td></td>
<td>ppm</td>
</tr>
<tr>
<td>4,4′ DNDPA</td>
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</tr>
<tr>
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</tr>
<tr>
<td>2,4′ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
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<td>DPA</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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Avg. % Stabilizer for Lot: 0.415

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42 %  
**Analyst Signature:** Stable: YES Unstable

**Lab. Supervisor Signature:**  
**Comments:** CATEGORY: A  
**Actions to be Taken:**

---

Form #158  
Original Print Date: 07/19/2010

EXP_001102
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81J070067  D533 / M6 propellant
Date of analysis:  Date: 19 JULY 2011

Other Information
Sample Data  Solvent
#1  0.50 g  100 ml  ACN

M6 Propellant

<table>
<thead>
<tr>
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<th></th>
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<td></td>
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<td>1286</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot 0.797

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst  Kisha Dickerson  Avg. Tot. Stabilizers 0.80%
Analyst Signature

Stable YES Unstable Comments

Lab. Supervisor Signature CATEGORY: A

Actions to be Taken
**STRAIGHT BILL OF LADING**

**CONTAINS HAZARDOUS MATERIALS**

**NOT NEGOTIABLE**

Received subject to the classification and tariffs in effect on the date of issue of this Straight Bill of Lading.

The property described below is in apparent good order, except as noted herein and condition of containers, packages, or packaging unaltered, as indicated below, unless otherwise noted in the bill of lading itself. Biller to deliver in accordance with instructions contained herein. Bills of lading that include any property ownership or condition that were not detected at the time of receipt shall be subject to any additional fees or penalties as determined by the carrier.

Shipment contains hazardous materials as defined by the Department of Transportation (DOT) Hazardous Materials Regulations.

**Shipper:** Explo Systems, Inc.
1400 Java Road
Minden, LA 71055

**Consignee:**

**Freight Charges:** Collect

**Purchased Order No.:**

**Location No.:**

**Shipping Date:** 1/14/13

**Expo Date:**

**Routing:**

**Charge Account No.:**

**Customer No.:**

**Rel. No.:**

**Proper Shipping Name and Hazmat Class:**

| UN1061, Powder, Smokeless, 1.3C, PG II | #112 | EXPLOSIVES 1.3 |

**Hazardous Materials Identification Number:** 

**Packing Group:**

**Pack Size:**

**Quantity:**

**Weight:**

**Net Explosive Weight:**

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, in accordance with the applicable requirements of the Department of Transportation.

**Signature:**

**FCC Radio License No.:**

**Chemical Emergency Phone:**

**DOT Hazardous Material Handling Number:**

**Local Federal Explosives License No.:**

**Exp_001104**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 4 JAN 2013

B/L# 2827

M 6

IND82H-070166  13 PTS 7-18-12.
IND83F-070278  7 PTS 7-11-12.
IND82E-070434  8 PTS
IND83K-070319  1 PT
IND85C-070512  1 PT 4-10-12.
IND83G-070281  1 PT 4-13-12.
IND82H-070167  3 PTS 7-2-12.
IND82D-070113  1 PT
IND82M-070221  2 PTS 11-15-12.
IND84G-070326  2 PTS 7-18-12.
IND82H-070168  3 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280

LIONEL KOONS

EXPLO SYSTEMS INC
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND85C070512

Date of analysis: Date: 10 AUGUST 2012

Other Information

M6 Propellant

Sample Data

Solvent

#1 0.50 g 100 ml ACN

Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
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<tbody>
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<td>50.0</td>
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<td>1371.4</td>
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Avg. % Stabilizer for Lot 1.339

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson

Avg. Tot. Stabilizers 1.34 %

Analyst Signature

Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND84G070326

<table>
<thead>
<tr>
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<th>D533 / M6 propellant</th>
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<td>Date: 3 MAY 2012</td>
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</tbody>
</table>

## Other Information

**M6 Propellant**

### Sample Data

- **Sample #**: #1
- **Solvent**: ACN
- **Weight**: 0.50 g
- **Volume**: 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (Area 1)</th>
<th>Intg. (Area)</th>
<th>Conc. (%)</th>
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</thead>
<tbody>
<tr>
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<td>3.335 1105.6</td>
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<td>50.0</td>
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### Avg. % Stabilizer for Lot

- **0.364**

**0.30% or more is Stability Code A**

**0.20% -0.29% is Stability Code C**

**Less than 0.20% is Stability Code D**

---

**Analyst**: Takisha Dickerson

**Avg. Tot. Stabilizers**: 0.36 %

**Analyst Signature**: Stable YES Unstable

**Comments**: CATEGORY: A

**Lab. Supervisor Signature**: Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83K070319  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 15 JUNE 2012

**Other Information**  
**M6 Propellant**

**Sample Data**  
**Solvent:**  
**#1**  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Inlg. Area 1</th>
<th>Inlg.</th>
<th>Conc. Area</th>
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<td>3.401</td>
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<td>0.000</td>
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<td>2,2’ DNDPA</td>
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<td>1554.2</td>
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<td>12.44</td>
<td>1376.8</td>
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<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot**  
0.694

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson  
**Avg. Tot. Stabilizers**  
0.69 %

**Analyst Signature**

**Stable**  
YES  
Unstable

**Comments**  
CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 April 2012

**Other Information**

**Sample Data**  
**Solvent**

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<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
</tr>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
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**Standards (ERG-006)**

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<th>Ret ppm</th>
<th>Time</th>
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<th>Intg.</th>
<th>Conc.</th>
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<td>0.881</td>
<td>40.9</td>
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<td>93.7</td>
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<td>3.279</td>
<td>928</td>
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<td>50.0</td>
<td>4.66</td>
<td>26957</td>
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<td>10.895</td>
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<td>0</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.312

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.31 %

**Stable** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**Date of analysis:**  
**D533 / M6 propellant**  
**Date:** 11 JULY 2012

**Other Information**  
M6 Propellant

<table>
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<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Intg.</td>
</tr>
<tr>
<td></td>
<td>Area %</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDA</td>
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<td>2,4'-DNDA</td>
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<td>945.1</td>
<td>0</td>
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<td>7.525</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
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<td>1580.4</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.843

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.84%

**Analyst Signature**

**Stable**  
**Unstable**

**Comments**

**CATEGORY:** A

**Actions to be Taken**

Form #158  
Original Print Date: 07/19/2010

019476  
EXP_001110
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82M070221  
**D533 / M6 propellant**  
**Date of analysis:** Date: 15 NOVEMBER 2

**Other Information**  
M6 Propellant

**Sample Data**  
Sample: #1  
Solvent: ACN

**Sample #**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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</thead>
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</tr>
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<td>DPA</td>
<td>200.0</td>
<td>10.92</td>
<td>5165.2</td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.644</td>
<td>1772.9</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  
0.702

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson  
**Average Tot. Stabilizers**  
0.70 %

**Analyst Signature**  

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  

**Actions to be Taken**  

---

Form #158

Original Print Date: 07/10/2010

EXP_001111
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070113  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 JAN 2012

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.018</td>
<td>1103.9</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.956</td>
<td>6219.8</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11,669</td>
<td>1532.4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td>328.4</td>
<td>0.276</td>
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<tr>
<td>16</td>
<td>0.002</td>
</tr>
<tr>
<td>21955</td>
<td>0.000</td>
</tr>
<tr>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>66.8</td>
<td>0.004</td>
</tr>
<tr>
<td>143.1</td>
<td>0.004</td>
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<tr>
<td>790.9</td>
<td>0.051</td>
</tr>
<tr>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

0.336

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.34 %

**Analyst Signature**

**Stable**  
YES Unstable

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070167  
**Sample Data:**  
**Solvent:** ACN  
**Other Information:**  
**M6 Propellant**  
**Sample #**  
**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td>308.2</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
<td>0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
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<td>4.943</td>
<td>1734.6</td>
<td>23824</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.018</td>
<td>1103.9</td>
<td>404.1</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
<td>50.5</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
<td>79.6</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.966</td>
<td>6219.8</td>
<td>750.3</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
<td>0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.349

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.35 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**

---

Form #459  
019479  
EXP_001113
# HPLC PROPellant Stability Report

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Date of analysis:** 1 FEB 2011

**Sample Data**
- **Solvent:** #1 0.5000 g 100 ml ACN

**Stabilizer** | **Conc. (ppm)** | **Ret Time** | **Intg. Area** | **Intg. Area %** |
--- | --- | --- | --- | --- |
4,4' DNDPA   | 50.0  | 4.156 | 1116 | 2540.4 0.228 |
2,4-DNDPA    | 50.0  | 9.388 | 1191.2 | 3123.1 2.622 |
2,2' DNDPA   | 50.0  | 10.987 | 1694.7 | 51.5 0.000 |
2,4' DNDPA   | 50.0  | 11.73 | 1272.3 | 143.2 0.011 |
4NDPA        | 50.0  | 12.459 | 2443.3 | 0 0.000 |
2NDPA        | 50.0  | 13.939 | 5852.1 | 838.5 0.014 |
DPA          | 200.0 | 15.022 | 1753.1 | 0 0.000 |
N-NitrosoDPA | 75.0  | 18.832 | 2535.1 | 985.4 0.000 |

**Avg. % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.88 %

**Analyst Signature**  
**Stable:** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
STRAIGHT BILL OF LADING  NOT NEGOTIABLE

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below in apparent good order, lashed and wedged, is properly crated and no visible damage is noted. The contents are consigned as indicated below, which said contents are understood to include all items and packages as illustrated. No exceptions or reservations are made as to the said contents.

Shipper: Explo Systems, Inc.
1601 Java Road
Minden, LA 71055

Consignee: (Mail or Street Address of Consignee)

Destination: (City, State)
County: (Standard Time Zone)
Route: (Route)
Charge Account: (Charge Account)

Freight Charges: Collect
Prepaid

Shipper's No.: 21929
Shipping Date: 1/9/15
Purchase Order No.: Location No.: 1600

Consolidation No.: (Consolidation No.)
Pod Lic.: (Pod License)
Exp. Date: 5/1/15
Exp. Date: 5/1/15

Rel. No.: (Rel. No.)
Customer P.O. No.: (Customer P.O. No.)

PROPER SHIPMENT NAME AND HAZARDOUS MATERIALS

<table>
<thead>
<tr>
<th>NET WT.</th>
<th>LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>410</td>
</tr>
</tbody>
</table>

Proper Shipping Name: UN0151, Powder, Smokeless, 1.3C, PG II
Exemption: Explosives 1.3

This is to certify that the above-named material is properly classified, described, packaged, marked, and labeled and is in accordance with the provisions of the Department of Transportation.

Signature: ____________________________
Invoice No.: ____________________________

Explo Systems, Inc.
1601 Java Road
Minden, LA 71055

DOT Hazardous Material Handling Number: A4907
Local Federal Explosives License No: 5/LA-119-20-7A-00047
(Shipper):

I have been offered the price included in the shipment as specified in 49CFR Part 172. I have received the above goods in apparent good order and condition.

Receiving Acknowledgment: ____________________________
Date: ________________

For Chemical Emergency: Skill, Leak, Fire, Exposure or Accident Call Chemtech Day Or Night
In the USA Call 800-324-2909
In Canada (EPP 40-4004) 506-691-4328
Elsewhere Call (703) 527-3024

NFPA 490.97

Exp_001115
AUSTIN POWDER PACKING LIST

SHIIPMENT DATE 8 JAN 2013

B/L# 7829

M-6

IND815-070115 4 PTS
IND87H-070107 1 PT
IND84K-070314 1 PT
IND82D-070113 3 PTS
IND82E-070115 5 PTS
IND82H-070108 2 PTS
IND83F-070278 5 PTS
IND87H-070720 2 PTS
IND82H-070168 3 PTS
IND82M-070221 2 PTS
JNP83F-070276 1 PT
IND81D-070019 1 PT
IND86F-070617 1 PT
IND88G-070284 1 PT
IND83K-070318 2 PTS
IND84H-070443 3 PTS
IND82H-070267 2 PTS
IND84L-070454 1 PT
IND82H-070165 1 PT
IND83M-070322 1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280

LIONEL KOOKS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND87H070720  |  D533 / M6 propellant  
Date of analysis:          |  Date: 18 NOV 2011

Other Information
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intg.</td>
</tr>
<tr>
<td>4,4'DNDPA 50.0 ppm</td>
<td>0.747</td>
</tr>
<tr>
<td>2,4-DNDPA 50.0 ppm</td>
<td>3.395</td>
</tr>
<tr>
<td>2,2'DNDPA 50.0 ppm</td>
<td>5.173</td>
</tr>
<tr>
<td>2,4'DNDPA 50.0 ppm</td>
<td>7.497</td>
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<tr>
<td>4NDPA 50.0 ppm</td>
<td>9.01</td>
</tr>
<tr>
<td>2NDPA 50.0 ppm</td>
<td>10.21</td>
</tr>
<tr>
<td>DPA 200.0 ppm</td>
<td>11.727</td>
</tr>
<tr>
<td>N-NitrosoDPA 75.0 ppm</td>
<td>12.547</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot 0.398

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

Analyst TAKISHA DICKERSON  
Avg. Tot. Stabilizers 0.40 %  
Analyst Signature  
Stable YES Unstable Comments  
Lab. Supervisor Signature  
CATEGORY: A  
Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070617  
**D533 / M6 propellant**

**Date of analysis: 18 JULY 2012**

**Sample Data**  
Sample: #1  
Weight: 0.50 g  
Volume: 100 ml  
Solvent: ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Inig. %</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
<td>389.2</td>
<td>0.291</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.365</td>
<td>949.7</td>
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<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.091</td>
<td>2605.4</td>
<td>22628</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.514</td>
<td>1047.9</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
<td>1698.8</td>
<td>45.3</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.142</td>
<td>3039.5</td>
<td>80.7</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.585</td>
<td>6044.7</td>
<td>861.6</td>
<td>0.057</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.4</td>
<td>1395.6</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.353

- **0.30% or more is Stability Code A**
- **0.20% -0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst:** Takisha Dickerson  
**Analyst Signature:** [Signature]

**Avg. Tot. Stabilizers:** 0.35%

**Stable:** YES  
**Unstable:**

**Comments:**

**CATEGORY:** A

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND84L070454  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 MAY 2012

**Other Information**  
Sample Data  
Solvent  
#1  
0.50 g  
100 ml  
ACN

### Standards (ERG-006)  
**Sample #**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret. Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.867</td>
<td>83.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.338</td>
<td>1156.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.017</td>
<td>5373.7</td>
<td></td>
<td></td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.147</td>
<td>1263.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.595</td>
<td>2061.4</td>
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<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.687</td>
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<td>DPA</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.99</td>
<td>2133.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.521

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.52%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

Date of analysis: Date: 12 APR 2012

### Other Information

M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>28.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.244</td>
<td>978.3</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.803</td>
<td>3426.7</td>
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<tr>
<td>2,4 DNDPA</td>
<td>50.0</td>
<td>6.74</td>
<td>1061.1</td>
</tr>
<tr>
<td>4NPDPA</td>
<td>50.0</td>
<td>8.012</td>
<td>1726.9</td>
</tr>
<tr>
<td>2NPDPA</td>
<td>50.0</td>
<td>9.091</td>
<td>3662.4</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.394</td>
<td>6185.4</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>10.968</td>
<td>1530.7</td>
</tr>
</tbody>
</table>

Average % Stabilizer for Lot: **2.112**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

Kisha Dickerson

Average Total Stabilizers: **2.11 %**

### Analyst Signature

Stable | YES | Unstable

### Comments

CATEGORY: A

### Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

## Lot Number:
IND83F070276

## D533 / M6 propellant

## Date of analysis:
Date: 4 Sep 2012

## Other Information
M6 Propellant

## Sample Data
<table>
<thead>
<tr>
<th>Sample</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Area 1</th>
<th>Intg. Time</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>578.6</td>
<td>1.186</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
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<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
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<td>5.22</td>
<td>777.3</td>
<td>23990</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>40.8</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>88.7</td>
<td>0.003</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>812.6</td>
<td>0.057</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Avg. % Stabilizer for Lot
1.249

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst
Mike Kile

## Avg. Tot. Stabilizers
1.25 %

## Analyst Signature
Stable | YES | Unstable

## Comments
CATEGORY: A

## Actions to be Taken
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**D533 / M6 propellant**

**Date of analysis:** Date: 11 JULY 2012

### Other Information

**Sample Data**
- **Solvent:** ACN
- **Sample #1:** 0.50 g, 100 ml

### Standards (ERG-008)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>ppm</th>
<th>Time</th>
<th>Area</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.803</td>
<td>32.3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.397</td>
<td>945.1</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.155</td>
<td>1996.1</td>
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<tr>
<td>4NDPA</td>
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<td>7.525</td>
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</tr>
<tr>
<td>2NDPA</td>
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<td>9.04</td>
<td>1580.4</td>
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<tr>
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<td>5473.7</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.606</td>
<td>1672.4</td>
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<td></td>
<td></td>
</tr>
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### Sample #

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>256.2</td>
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<tr>
<td></td>
<td></td>
<td>21574</td>
<td>0.000</td>
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<td></td>
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<td>0.000</td>
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<td></td>
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<td>89.7</td>
<td>0.006</td>
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<tr>
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<td>35.4</td>
<td>0.001</td>
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<tr>
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<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
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</table>

### Average % Stabilizer for Lot: 0.843

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.84 %

### Analyst Signature

**Stable:** YES  
**Unstable:**

### Comments

**CATEGORY:** A

### Lab. Supervisor Signature

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070167  
**D533 / M6 propellant**  
**Date of analysis:** Date: 6 JAN 2012  
**Other Information**  
**M8 Propellant**  
**Sample Data**  
<table>
<thead>
<tr>
<th>Sample</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
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</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
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</table>

## Standards (ERG-006)

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<th>Conc. ppm</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
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<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td></td>
<td>308.2</td>
<td>0.259</td>
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</tr>
<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
<td></td>
<td>0</td>
<td>0.000</td>
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<td></td>
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<tr>
<td>2,2’ DNDA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
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<td>23824</td>
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<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
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<td>50.5</td>
<td>0.003</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
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<td>79.6</td>
<td>0.003</td>
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<td>DPA</td>
<td>200.0</td>
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<td>0</td>
<td>0.000</td>
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<td></td>
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**Avg. % Stabilizer for Lot:** 0.349

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.35 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82M070221  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Solvent:** ACN  
**Sample Data:**  
- **Sample #1:** 0.50 g, 100 ml

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.777</td>
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<td>50.0</td>
<td>3.255</td>
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<td>2,2' DNDPA</td>
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<td>2,4' DNDPA</td>
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<td>6.986</td>
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<td>75.0</td>
<td>11.644</td>
<td>1772.9</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.702

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Analyst Signature:**  
**Avg. Tot. Stabilizers:** 0.70 %  
**Stable:** YES  
**Unstable:**  
**Comments:** CATEGORY: A  
**Actions to be Taken:**  

Form #158  
Original Print Date: 07/19/2040  
EXP_001124
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND82H070168

### D533 / M6 propellant

**Date of analysis:**

**Date:** 1 FEB 2011

## Other Information

**Sample Data**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>#</th>
<th>Sample</th>
<th>0.5000 g</th>
<th>100 ml</th>
<th>ACN</th>
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<tbody>
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## M6 Propellant

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>51.5</td>
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<td>1272.3</td>
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<td>0.011</td>
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<tr>
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<td>1753.1</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
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</tr>
</tbody>
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---

### Avg. % Stabilizer for Lot

2.875

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### Notes

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

---

**Analyst**

Mike Kile

**Avg. Tot. Stabilizers**

2.88%

**Analyst Signature**

Stable

**Comments**

YES Unstable

**Lab. Supervisor Signature**

CATEGORY: A

**Actions to be Taken**

---

**Form #158**

019491 EXP_001125
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070115  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 2 SEPTEMBER 2

## Other Information
- **Sample Data:**  
  - Solvent: ACN  
  - Sample #1: 0.50 g, 100 ml
- **M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Int Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
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<td>3.438</td>
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</tr>
<tr>
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<td>5.235</td>
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</tr>
<tr>
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<td>7.519</td>
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<td>11.959</td>
<td>5688.4</td>
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<td>12.823</td>
<td>1409.6</td>
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</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.505

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

## Analyst
- **KISHA DICKERSON**
  - **Avg. Tot. Stabilizers:** 0.50 %

## Analyst Signature
- **Stable:** YES  
- **Unstable:**

## Lab. Supervisor Signature
- **Comments:** CATEGORY: A  
- **Actions to be Taken:**
# HPLC PROPellant STABILITY REPORT

**Lot Number:** IND82D070113  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 JAN 2012

### Standards (ERG-006)  
### Sample #

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Intg.</th>
<th>Area</th>
<th>Concentration Conc. Area %</th>
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<tbody>
<tr>
<td>4,4’-DNDDPA</td>
<td>50.0</td>
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<td>1019.8</td>
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<td>16 0.002</td>
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<tr>
<td>2,2’-DNDDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
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<td>21955 0.000</td>
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<td>2,4’-DNDDPA</td>
<td>50.0</td>
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<td>1103.9</td>
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<td>0 0.000</td>
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<td>4NDDPA</td>
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<td>8.439</td>
<td>1782.5</td>
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<td>66.8 0.004</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
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<td>143.1 0.004</td>
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<tr>
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<td>10.956</td>
<td>6219.8</td>
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<td>790.9 0.051</td>
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<td>11.669</td>
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</table>

Avg. % Stabilizer for Lot: 0.336

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.34 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**  
**Comments:** CATEGORY: A

**Lab. Supervisor Signature**  
**Actions to be Taken**

---

019493  
EXP_001127
# HPLC Propellant Stability Report

## Lot Number:
**IND81D070019**

## Date of analysis:
**Date: 29 MAY 2012**

## Solvent
**Sample Data**
- **Solvent**: #1
- **Sample Weight**: 0.50 g
- **Volume**: 100 ml
- **ACN**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret. Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
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<tbody>
<tr>
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<td>0.86</td>
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<td>5.133</td>
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<td>8.917</td>
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<td>5642.3</td>
<td>917.9</td>
<td>0.065</td>
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<td>N-NitrosoDPA</td>
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<td>12.414</td>
<td>1351.4</td>
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<td>0.000</td>
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</table>

## Avg. % Stabilizer for Lot
**0.309**

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst
**Takisha Dickerson**

## Avg. Tot. Stabilizers
**0.31 %**

## Analyst Signature

## Comments
**CATEGORY:** A

## Lab. Supervisor Signature

## Actions to be Taken

---

**019494**

**EXP_001128**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 OCT 2010

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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## Standards (ERG-006)

<table>
<thead>
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<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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<td>4,4' DNDPA</td>
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<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
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<td>12.67</td>
<td>275.3</td>
<td>35.7</td>
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</tr>
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<td>4NDPA</td>
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<td>0.000</td>
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<td>14.943</td>
<td>1788.8</td>
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<td>0.002</td>
</tr>
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<td>16.114</td>
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<td>75.0</td>
<td>19.917</td>
<td>329.9</td>
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<td>0.000</td>
</tr>
</tbody>
</table>

## Analyst

**Kisha Dickerson**

**Avg. Tot. Stabilizers:** 0.85%

**Stable:** YES  
**Unstable:**

**Comments:**

**CATEGORY:** A

**Actions to be Taken**
**STRAIGHT BILL OF LADING**

```
RECEIVED subject to the classification and limits in effect on the date of issue of the original bill of lading. This property described below, in apparent good order, except as stated (condition) and condition of contents of packages unknown) consigned, and declared as indicated below, which said carriage (the word "carriage" meaning any person or corporation) is possessed of the property under the contract of carriage, are subject to be payable for all or any portion of said route to destination, and subject to the classification or rates which govern the transportation of this document and the said terms and conditions hereof are hereby agreed to by the shipper and acceptor hereof and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect
Proprietor: Y/N

```

**CONTAINS HAZARDOUS MATERIALS**

| UNIT OF ISSUE | SHIPPED IN | PROPER SHIPMENT NAME AND HAZARDOUS CLASSE | DESCRIPTION, NET WT. | EXEMPTION [49CFR] | INV
|---------------|------------|---------------------------------------------|----------------------|--------------------|-----|
| 5-1/4" x 42" | UN0151, Powder, Smokeless, 1.3C, PG II | S12-RK, (15T) | EXPLOSIVES 1.3 | #112 | 714066010

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

```
Signature: [Signature]
Exterior No: [Exterior No]

```

```
Purchased Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Prepared By: [Signature]

DOT Hazardous Material Handling Number:
Local Federal Explosives License No. 5-LA-119-20-IA-00567.
(Shipper)

```

```
CONTAINS HAZARDOUS MATERIALS

```

019496 EXP_001130
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 11 JAN 2013

B/# 2831

M-6

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<th>2 PTS</th>
</tr>
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<td>2 PTS</td>
</tr>
<tr>
<td>IND88E-070963</td>
<td>3 PTS</td>
</tr>
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<td>IND85C-070512</td>
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<td>IND91H-071485</td>
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<td>IND81F-070024</td>
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</tr>
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42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND91H071485  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 JULY 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Intg. Conc. Area %</td>
</tr>
<tr>
<td>ppm Time Area 1</td>
<td></td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0 0.847 108.1 464.3 0.430</td>
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<td>2,4'-DNDPA</td>
<td>50.0 3.306 967.8 0 0.000</td>
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<tr>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0 7.496 1085.1 0 0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0 8.926 1772.8 169.1 0.010</td>
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<td>50.0 9.898 1314.8 134.6 0.010</td>
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<td>200.0 11.562 6236.1 208.7 0.013</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0 12.356 1452.1 0 0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.463

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.46 %

**Analyst Signature:**  
**Lab. Supervisor Signature:**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Actions to be Taken:**
# HPLC Propellant Stability Report

**Lot Number:** IND88E070963  
**D533 / M6 propellant**

**Date of analysis:** Date: 25 AUG 2010

**Other Information**

- **M6 Propellant**

**Sample Data**

- **Sample #1**
  - 0.5000 g
  - 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-DNDDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
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<tr>
<td>2,4-DNDDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
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<tr>
<td>2,2’-DNDDPA</td>
<td>50.0</td>
<td>7.038</td>
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<tr>
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<td>11.434</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
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<td>N-Nitroso-DPA</td>
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<td>1296.7</td>
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**Avg. % Stabilizer for Lot:** 0.986

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.98%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**

---

**Form #158**  
**Original Print Date:** 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88A070891  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 10 NOV 2011

## Other Information

**Sample Data**  
- **Solvent:** ACN  
- **#1:** 0.50 g  
- **100 ml**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc./ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’DNDPA</td>
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<td>2,2’DNDPA</td>
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<td>5.139</td>
<td>1982.5</td>
<td>27828</td>
<td>0.000</td>
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<tr>
<td>2,4’DNDPA</td>
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<td>7.414</td>
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<td>4NDCPA</td>
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<td>12.407</td>
<td>1919.6</td>
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<td>0.000</td>
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Avg. % Stabilizer for Lot: **0.821**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** **0.82 %**

**Analyst Signature**  
**Stable** | **YES** | **Unstable**

**Comments**  
**CATEGORY:** **A**

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 10 AUGUST 2012

### Standards (ERG-006)

<table>
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<tr>
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<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
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</thead>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.363</td>
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<td>4NDPA</td>
<td>50.0</td>
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<td>50.0</td>
<td>9.95</td>
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<td>75.0</td>
<td>12.173</td>
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<table>
<thead>
<tr>
<th>Sample #</th>
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<td>Intg.</td>
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<tr>
<td>Conc.</td>
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<tr>
<td>Area %</td>
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<tr>
<td>0.003</td>
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<td>714.1</td>
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<tr>
<td>0.049</td>
</tr>
<tr>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 1.339

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**

**Analyst Signature:**

**Avg. Tot. Stabilizers:** 1.34%

**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010
# HPLC PROPellant Stability Report

**Lot Number:** IND81D070019  
**D533 / M6 propellant**  
**Date of analysis:** Date: 29 MAY 2012  
**Sample Data**  
<table>
<thead>
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<th>Sample #</th>
<th>Solvent</th>
<th>#1</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
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<td>0.86</td>
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<td>2,4-DNBP</td>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.133</td>
<td>1007.2</td>
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<td>0.000</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.409</td>
<td>1002.4</td>
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<td>282.1</td>
<td>0.010</td>
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<td>12.414</td>
<td>1351.4</td>
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**Avg. % Stabilizer for Lot:** 0.309

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.31 %  
**Stable** | YES | Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81G070061  D533 / M6 propellant
Date of analysis: Date: 12 JULY 2011

Other Information
M6 Propellant
Sample Data
#1 0.50 g 100 ml ACN

Solvent

Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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<td>5.325</td>
<td>95</td>
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<td>0.011</td>
<td></td>
</tr>
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<td>913.3</td>
<td>0.061</td>
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<td>N-NitrosoDPA</td>
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<td>13.034</td>
<td>1443.1</td>
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<td>111.8</td>
<td>0.000</td>
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</table>

Avg. % Stabilizer for Lot: 0.421

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Mike Kile  Avg. Tot. Stabilizers: 0.42%

Analyst Signature

Stable: YES  Unstable: 
Comments: CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81F0700024  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 9 DEC 2011

## Other Information

**Sample Data**  
Sample #1  
0.50 g  
100 ml  
ACN

## Solvent

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area %</th>
<th>Intg. Area</th>
<th>Conc. %</th>
<th>Avg. % Stabilizer for Lot</th>
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</thead>
<tbody>
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<td>2,2’-DNDPA</td>
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<td>5.039</td>
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<td></td>
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<td>0.040</td>
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<td>12.035</td>
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<td>0</td>
<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.582

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

**TAKISHA DICKERSON**  
**Avg. Tot. Stabilizers:** 0.58 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

## Lab. Supervisor Signature

**Actions to be Taken**
## STRAIGHT BILL OF LADING

**CONTAINS HAZARDOUS MATERIALS**

This is a straight bill of lading and is not negotiable. It is to be used for the shipment of hazardous materials as indicated. The shipper must ensure that the goods are properly packed, marked, and labeled according to the regulations and guidelines set forth by the appropriate authorities. The bill of lading is null and void if any alteration is made without the written consent of the shipper and the carrier.

**Shipper:**
Shipper: Eight Airways, Inc.
Address: 7000 Java Road, Millbury, MA 01950

**Consignee:**
Consignee: [Blank]
Address: [Blank]

**Packing List:**
- UN0161, Brown, Smokey's, 195, 33 x 16
- UN0504, Brown, Smokey's, 195, 37 x 21
- UN0504, Brown, Smokey's, 195, 37 x 21
- UN0504, Brown, Smokey's, 195, 37 x 21

**Packing Instruction:**
EXPLOSIVES 1.3

**Invoice Number:**
[Blank]

**Shipment Date:**
28/12

**Weight:**
- Gross: 17.22 kg
- Net: 15.92 kg

**Markings:**
- [Blank]

**Other Information:**
- [Blank]

**Bill of Lading Number:**
87AT21

**Packing List:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN0161, Brown, Smokey's</td>
<td>19 units</td>
<td>15.92</td>
</tr>
<tr>
<td>UN0504, Brown, Smokey's</td>
<td>16 units</td>
<td>1.3</td>
</tr>
<tr>
<td>UN0504, Brown, Smokey's</td>
<td>33 units</td>
<td>1.3</td>
</tr>
<tr>
<td>UN0504, Brown, Smokey's</td>
<td>32 units</td>
<td>1.3</td>
</tr>
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</table>

**Packaging Material:**
- [Blank]

**Sticker Information:**
- [Blank]

**Certification:**
- [Blank]

**Shipper's Name:**
- [Blank]

**Preprain:**
- [Blank]

**Location No.:**
- [Blank]

**Buyer:**
- [Blank]

**Freight Charges:**
- [Blank]

**Packing List:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN0161, Brown, Smokey's</td>
<td>19 units</td>
<td>15.92</td>
</tr>
<tr>
<td>UN0504, Brown, Smokey's</td>
<td>16 units</td>
<td>1.3</td>
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<td>33 units</td>
<td>1.3</td>
</tr>
<tr>
<td>UN0504, Brown, Smokey's</td>
<td>32 units</td>
<td>1.3</td>
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**Certification:**
- [Blank]

**Shipper's Name:**
- [Blank]

**Prepain:**
- [Blank]

**Location No.:**
- [Blank]

**Buyer:**
- [Blank]

**Freight Charges:**
- [Blank]
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND91H071485  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 JULY 2012

## Other Information

- **Sample Data**
  - M6 Propellant
  - Solvent
  - #1
  - 0.50 g
  - 100 ml
  - ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.847</td>
<td>108.1</td>
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<td>0.430</td>
<td></td>
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<tr>
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<td>50.0</td>
<td>3.366</td>
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<td>0.000</td>
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</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.09</td>
<td>4480</td>
<td>20931</td>
<td>0.000</td>
<td></td>
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<tr>
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<td>50.0</td>
<td>7.496</td>
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<td>4NDPA</td>
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<td>8.926</td>
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<td>9.898</td>
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<td>DPA</td>
<td>200.0</td>
<td>11.552</td>
<td>6236.1</td>
<td>208.7</td>
<td>0.013</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.356</td>
<td>1452.1</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
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**Avg. % Stabilizer for Lot:** 0.463

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.46 %

**Analyst Signature:** [Signature]

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:** [Signature]

**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88E070963  
**D533 / M6 propellant**

**Date of analysis:** Date: 25 AUG 2010

## Other Information
- Sample Data:
  - Solvent: #1 0.5000 g  
  - 100 ml ACN
- M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>1369.8</td>
<td>0.935</td>
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<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
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<td>0.000</td>
</tr>
<tr>
<td>2,2' DNPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2587.5</td>
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<td>0.000</td>
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<td>2,4' DNDA</td>
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<td>9.931</td>
<td>938.5</td>
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<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2nDPA</td>
<td>50.0</td>
<td>12.813</td>
<td>1899.7</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4866.9</td>
<td>610.3</td>
<td>0.050</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td>0</td>
<td>0.000</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.985

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

## Analyst
- Kisha Dickerson

## Analyst Signature

### Avg. Tot. Stabilizers: 0.98%

### Stable: YES  |  Unstable

### Comments
- CATEGORY: A

### Actions to be Taken

---

Form #158  
Original Print Date: 07/19/2010

019507

EXP_001141
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88A070891  
**Date of analysis:** 10 NOV 2011

### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>50.0</td>
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<td>50.0</td>
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<td>25.7</td>
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<td>75.0</td>
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<td>1919.6</td>
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**Avg. % Stabilizer for Lot:** 0.821

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.82%

**Comments:**  
**CATEGORY:** A  
**Actions to be Taken:**

**Analyst Signature:** Stable YES Unstable

**Lab. Supervisor Signature:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**D533 / M6 propellant**

**Date of analysis:** Date: 10 AUGUST 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>8.8</td>
<td>112.9</td>
<td>1.283</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.343</td>
<td>910.9</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.034</td>
<td>3858.6</td>
<td>22576</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.363</td>
<td>1013.2</td>
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<td>0.000</td>
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<td>12.173</td>
<td>1371.4</td>
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</tr>
</tbody>
</table>

## Average % Stabilizer for Lot

1.339

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson

**Avg. Tot. Stabilizers** 1.34 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPellant Stability Report

**Lot Number:** IND84L070454  
**D533 / M6 Propellant**

**Date of analysis:** Date: 4 MAY 2012

**Other Information**

<table>
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<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
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<td>#1</td>
<td>ACN</td>
</tr>
<tr>
<td>0.50 g</td>
<td>100 ml</td>
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</table>

**M6 Propellant**

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4, 4'DNDPA</td>
<td>50.0 ppm</td>
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<tr>
<td>2, 4-DNDPA</td>
<td>50.0 ppm</td>
<td>3.338</td>
<td>1156.5</td>
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</tr>
<tr>
<td>2, 2'DNDPA</td>
<td>50.0 ppm</td>
<td>5.017</td>
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<td>23342</td>
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<tr>
<td>2, 4'DNDPA</td>
<td>50.0 ppm</td>
<td>7.147</td>
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<tr>
<td>4NDPA</td>
<td>50.0 ppm</td>
<td>8.595</td>
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<td>48.3</td>
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<td>2NDPA</td>
<td>50.0 ppm</td>
<td>9.687</td>
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<td>DPA</td>
<td>200.0</td>
<td>11.119</td>
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<td>75.0</td>
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**Average % Stabilizer for Lot:** 0.521

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.52 %

**Analyst Signature**

**Stable** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
直式提单

承运方：Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

目的地：

收货人：

运单号：

货物：UN0161, Powder, Smokeless, 1.3C, PG II

危险性分类：

重量：

此提单包含危险材料，承运方对分类、包装、标记和识别的正确性负责，确保货物在运输过程中的安全。
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 22 JAN 2013

B/L# 2835  TRL 6810016

M-6

IND84K-070452  3 PTS
IND81D-070020  1 PT
IND94H-071485  2 PTS
IND81D-070019  2 PTS
IND85C-070572  2 PTS
IND85G-070512  8 PTS
IND89D-070039  4 PTS
IND81L-070072  1 PT
IND83F-070276  9 PTS
IND82H-070168  4 PTS
IND83E-070278  2 PTS
IND85F-070587  4 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

[Signature]

LIONEL Koons

EXPO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070587  
**D533 / M6 propellant**  
**Date of analysis:** Date: 25 AUG 2010  
**Other Information**  
M6 Propellant  
**Sample Data**  
#1 0.5000 g  
100 ml ACN

## Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
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<tr>
<td>4,4' DNDPA</td>
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<td>2.177</td>
<td>146.5</td>
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<td>1.243</td>
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<td>2,4-DNDPA</td>
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<td>5.001</td>
<td>961.7</td>
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<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14427.7</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
<td>1809.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
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<td>0.018</td>
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<td>75.0</td>
<td>15.18</td>
<td>1286.7</td>
<td>0</td>
<td>0.000</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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<tbody>
<tr>
<td></td>
<td>1.262</td>
<td></td>
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</table>

**Avg. % Stabilizer for Lot:** 1.262

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.26 %  
**Analyst Signature**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001147
# HPLC Propellant Stability Report

**Lot Number:** IND85C070512

**Date of analysis:** Date: 10 AUGUST 2012

**Other Information**

**Sample Data**

| Solvent | #1 | 0.50 g | 100 ml | ACN |

**Standards (ERG-006)**

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Inlg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Inlg.</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>8.8</td>
<td>112.9</td>
<td>1.283</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
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<td>3.343</td>
<td>910.9</td>
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<tr>
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<td>50.0</td>
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**Avg. % Stabilizer for Lot:** 1.339

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson

**Analyst Signature:**

**Avg. Tot. Stabilizers:** 1.34%

**Stable:** YES

**Unstable:**

**Comments:** CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070452  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 13 AUGUST 2012

**Other Information**  
**M6 Propellant**

**Sample Data**  
**Solvent**  
#1 0.50 g  100 ml  ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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**Avg. % Stabilizer for Lot:** 0.622

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.62%

**Analyst Signature**  
[Dickerson]

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 Sep 2012

## Other Information

**Sample Data**  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc. ppm</th>
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<th>Inlg. Area %</th>
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## Sample #

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<td>40.6</td>
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<td>88.7</td>
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<td>812.6</td>
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<tr>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.249

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

**Mike Kile**  
**Avg. Tot. Stabilizers:** 1.25%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001150
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Sample Data #1:** 0.50 g 100 ml ACN  
**Solvent:** ACN

## Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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</table>

Avg. % Stabilizer for Lot: 0.843

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.84 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**  
**Comments:** CATEGORY: A  
**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

019517  
EXP_001151
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168 | **D533 / M6 propellant**

**Date of analysis:** | **Date:** 1 FEB 2011

**Solvent**

| Sample Data | #1 | 0.5000 g | 100 ml | ACN |

**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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<td><strong>Conc.</strong></td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
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</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
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<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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**Avg. % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.88 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 29 MAY 2012

#### Other Information

**Sample Data**  
Solvent: 
#1  0.50 g  100 ml  ACN

#### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
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**Avg. % Stabilizer for Lot:** 0.309

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.31 %

**Analyst Signature**  
Stable: YES  Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND81L070072  
**D533 / M6 propellant**

**Date of analysis:** Date: 29 MAY 2012

### Other Information
- **Sample Data:**
  - **Solvent:** ACN
  - **Sample:** #1
  - **Weight:** 0.50 g
  - **Volume:** 100 ml

### Standards (ERG-006)

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<th>Ret ppm</th>
<th>Intg.</th>
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### Avg. % Stabilizer for Lot
- **0.363**

- **0.30% or more is Stability Code A**
- **0.20% -0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
**0.36 %**

**Analyst Signature**

**Stable**  
**YES**  
**Unstable**

**Comments**

**CATEGORY:**  
A

**Actions to be Taken**  

---

019520  
EXP_001154
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND81D070020

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<th>Date: 10 Feb 2012</th>
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## Other Information

<table>
<thead>
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</thead>
<tbody>
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## Standards (ERG-006)

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<th>Intg. ppm</th>
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### Avg. % Stabilizer for Lot 0.797

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

<table>
<thead>
<tr>
<th>Mike Kile</th>
</tr>
</thead>
</table>

## Analyst Signature

### Avg. Tot. Stabilizers 0.80 %

### Stable YES Unstable

### Comments

### CATEGORY: A

### Actions to be Taken
## STRAIGHT BILL OF LADING

### NOT NEGOTIABLE

The property described below, in apparent good order, except as noted (condition and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination, it or its route, or otherwise to deliver said property on said route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to distribution, and as to such party at any time interested in all or any said property, that every service or service performed hereunder shall be subject to all the terms and conditions of the Uniform Domestico Straight Bill of Lading 6th Edition (1) In Uniform Freight Classification in effect on the date hereof, (2) No. is a rail or motor carrier, or (3) in the applicable for classification or tariff it is in a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the Shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055

**At:**  

**By:**  
Freight Charges: Collect  
Prepaid

**Shipper's No.** 2834  
Shipping Date 11/13/17  
Purchase Order No.  
Location No. 10/2/17

### (Mail or Street Address of Consignee — for purposes of notification only)

**Consignee:**  
Fed Lic.

**Destination:**  
State

**County:**  
State Lic.

**Route:**  
Customer No.

### Charge Account of:  
Customer P.O. No.  
Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED No. of Pieces</th>
<th>SHIPPED No. of Units</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>H-NUMBER No. of Pcs</th>
<th>RETURNED No. of Units</th>
<th>EXEMPTION CODE</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
<td></td>
<td></td>
<td>EXPLOSIVES 1.3</td>
</tr>
</tbody>
</table>

This is to certify that the above-named material is properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Signature:**  

**Invoice No.:**

**Date:**

**Received By:**

**CONSIGNEE:**

**MATERIAL HANDLING**:  

**LHD Explosives License No.** 5-LA-119-20-1A-00067

---

**AUTHORIZE RECEIPT:**

**019522**

**EXP_001156**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 16 JAN 2013

B/L# 2834

M-6

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IND85F-070588</td>
<td>10 Pts</td>
<td></td>
</tr>
<tr>
<td>IND82H-070168</td>
<td>1 Pt</td>
<td></td>
</tr>
<tr>
<td>IND82D-070113</td>
<td>1 Pt</td>
<td></td>
</tr>
<tr>
<td>IND86E-070617</td>
<td>6 Pts</td>
<td>7 lbs</td>
</tr>
<tr>
<td>IND82H-070167</td>
<td>2 Pts</td>
<td>7.3 lbs</td>
</tr>
<tr>
<td>IND85C-070512</td>
<td>2 Pts</td>
<td></td>
</tr>
<tr>
<td>IND84B-070325</td>
<td>2 Pts</td>
<td></td>
</tr>
<tr>
<td>IND81F-070022</td>
<td>3 Pts</td>
<td>2 lbs</td>
</tr>
<tr>
<td>IND81D-070019</td>
<td>1 Pt</td>
<td></td>
</tr>
<tr>
<td>IND84B-070325</td>
<td>1 Pts</td>
<td></td>
</tr>
<tr>
<td>IND84G-070326</td>
<td>1 Pts</td>
<td>7.18 lbs</td>
</tr>
<tr>
<td>IND81D-070020</td>
<td>3 Pts</td>
<td></td>
</tr>
</tbody>
</table>

33 Pts with 6 FB @140 LBS PER DRUM

TOTAL 27,720 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070617  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 18 JULY 2012

### Other Information
- Sample Data
  - #1
  - 0.50 g
  - 100 ml
  - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
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<td>0.291</td>
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<td>50.0</td>
<td>3.365</td>
<td>949.7</td>
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<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.091</td>
<td>2605.4</td>
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<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.514</td>
<td>1047.9</td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
<td>1698.8</td>
<td></td>
<td>0.033</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.142</td>
<td>3039.5</td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.585</td>
<td>6044.7</td>
<td></td>
<td>0.057</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.4</td>
<td>1395.6</td>
<td></td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot
- **0.353**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
**0.35 %**

**Analyst Signature**

**Comments**  
Stable: YES  
Unstable: Unstable  
CATEGORY: A

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND85C070512  
**Date of Analysis:** 10 August 2012  
**Sample Data:**  
- Sample: #1  
- Weight: 0.50 g  
- Volume: 100 ml  
- Solvent: ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret (min)</th>
<th>Intg. (Area 1)</th>
<th>Intg. (Area %)</th>
<th>Conc. (Area %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>8.8</td>
<td>112.9</td>
<td>1.283</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.343</td>
<td>910.9</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.034</td>
<td>3858.6</td>
<td>22576</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.363</td>
<td>1013.2</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.784</td>
<td>1647.3</td>
<td>59.7</td>
<td>0.004</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.95</td>
<td>2919.6</td>
<td>95.5</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.386</td>
<td>5857.1</td>
<td>714.1</td>
<td>0.049</td>
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<tr>
<td>N-Nitroso-DPA</td>
<td>75.0</td>
<td>12.173</td>
<td>1371.4</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Analyst

**Takisha Dickerson**  
**Signature:** [Signature]

**Average % Stabilizer for Lot:** 1.339

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Average Total Stabilizers:** 1.34%

**Stable:** Yes

**Comments:** CATEGORY: A

**Actions to be Taken:**

---

**Form #158**  
**Original Print Date:** 07/19/2010  
**EXP_001159**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070588  
**D533 / M6 propellant**  
**Date of analysis:** Date: 20 Dec 2010

<table>
<thead>
<tr>
<th>Other Information</th>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6 Propellant</td>
<td>#1</td>
<td>0.5000 g 100 ml ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'd DNDPA</td>
<td>50.0</td>
<td>2.059</td>
<td>87.1</td>
<td></td>
<td>1411.1</td>
<td>1.620</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.198</td>
<td>631.9</td>
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<td>845.8</td>
<td>0.134</td>
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<td>50.0</td>
<td>7.699</td>
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<td>15722.5</td>
<td>0.000</td>
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<td>2,4'd DNDPA</td>
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<td>11.782</td>
<td>545</td>
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<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>13.513</td>
<td>1464.9</td>
<td></td>
<td>246.8</td>
<td>0.017</td>
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</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>15.189</td>
<td>1011.6</td>
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<td>0</td>
<td>0.000</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.638</td>
<td>2894.7</td>
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<td>306.8</td>
<td>0.043</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.069</td>
<td>720.1</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

### Average % Stabilizer for Lot

1.814

*0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D*

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers** 1.81 %  
**Stable** YES  
**Unstable**

**Comments** CATEGORY: A  
**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND84G070326  
D533 / M6 propellant

Date of analysis:  
Date: 3 MAY 2012

Other Information  
M6 Propellant

Sample Data  
Solvent

<table>
<thead>
<tr>
<th>Sample #</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

Standards (ERG-006)  
Sample #

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.867</td>
<td>104.4</td>
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<td>3.335</td>
<td>1105.6</td>
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<td>0</td>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.007</td>
<td>4986.7</td>
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<td></td>
</tr>
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<td>50.0</td>
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<td>50.0</td>
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<td>87.1</td>
<td>0.004</td>
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<td></td>
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<td>9.688</td>
<td>3527.8</td>
<td>151.4</td>
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<td>785.8</td>
<td>0.045</td>
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<td></td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.897</td>
<td>1704.5</td>
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<td>0.000</td>
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</tbody>
</table>

Avg. % Stabilizer for Lot  
0.364

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

Analyst  
Takisha Dickerson

Analyst Signature  

Avg. Tot. Stabilizers  
0.36 %

Stable  
YES | Unstable

Comments  
CATEGORY: A

Lab. Supervisor Signature  

Actions to be Taken  

EXP_001161
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND84BY70325

## D533 / M6 propellant

### Date of analysis:
Date: 4 AUGUST 2011

### Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
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</table>

### M6 Propellant

### Standards (ERG-006)

<table>
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<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.633</td>
<td>245.7</td>
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<td>0.246</td>
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<td>3.489</td>
<td>1008</td>
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<td>0.000</td>
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<td>50.0</td>
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<td></td>
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<td>9.38</td>
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<td>5674.1</td>
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<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot 0.298

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst
TAKISHA DICKERSON

## Avg. Tot. Stabilizers 0.30 %

## Analyst Signature

## Stable YES Unstable

## Lab. Supervisor Signature

## Comments
CATEGORY: A

## Actions to be Taken

---

Form #158

Original Print Date: 07/19/2010

019528

EXP_001162
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070167  
**D533 / M6 propellant**

**Date of analysis:**  
**Solvent**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>100 ml ACN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>ppm</td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td>308.2</td>
<td>0.259</td>
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</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.943</td>
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<td>404.1</td>
<td>0.037</td>
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</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
<td>50.5</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
<td>79.6</td>
<td>0.003</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.956</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
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<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.349

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.35%

**Analyst Signature**

**Stable**  YES  Unstable

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC Propellant Stability Report

## Lot Number: IND82D070113

### Date of analysis: 6 JAN 2012

#### D533 / M6 propellant

### Sample Data

<table>
<thead>
<tr>
<th>Solvent</th>
<th>100 ml ACN</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td></td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Concentration (ppm)</th>
<th>Retention Time (Area 1)</th>
<th>Intensity Area</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td>328.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
<td>16</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
<td>21955</td>
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<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.018</td>
<td>1103.9</td>
<td>0</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
<td>66.8</td>
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<tr>
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<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
<td>143.1</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.956</td>
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<td>790.9</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
<td>0</td>
</tr>
</tbody>
</table>

### Average % Stabilizer for Lot

**0.336%

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

**Takisha Dickerson**

### Average Total Stabilizers

**0.34%**

### Analyst Signature

**Stable**

### Comments

**YES**

### Lab. Supervisor Signature

**UNSTABLE**

**CATEGORY: A**

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 FEB 2011

**Other Information**  
**M6 Propellant**

**Sample Data**  
**Solvent**

<table>
<thead>
<tr>
<th>Sample #</th>
<th>0.5000 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standards (ERG-006)</strong></td>
<td><strong>Sample #</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stabilizer</td>
<td>Concentration (ppm)</td>
<td>Retention Time (min)</td>
<td>Intensity Area 1</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
</tr>
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<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
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<td>2,4'-DNDA</td>
<td>50.0</td>
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<td>1272.3</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.459</td>
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<td>50.0</td>
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<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
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</table>

**Avg. % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.88%

**Analyst Signature**  
**Stable:** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

**Other Information**  
Sample Data  
#1  0.5000 g  100 ml  ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4′-DNDDPA</td>
<td>50.0</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>2,4′-DNDDPA</td>
<td>50.0 4.884</td>
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<td>50.0 9.663</td>
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<td></td>
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<tr>
<td>2,4′-DNDDPA</td>
<td>50.0 11.213</td>
<td>1155.8</td>
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<td>0</td>
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<tr>
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<td>50.0 11.899</td>
<td>750.7</td>
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<td></td>
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<td>50.0 12.536</td>
<td>1565</td>
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<td></td>
<td>0</td>
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<tr>
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<td>200.0 13.934</td>
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<td></td>
<td>0</td>
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<td>N-NitrosoDPA</td>
<td>75.0 14.875</td>
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<td></td>
<td>451.1</td>
<td>0.063</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.237

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.24%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
CATEGORY: A  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**

**Date of analysis:** 29 MAY 2012

### Other Information

- **Sample Data:**
  - Sample #1: 0.50 g, 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.86</td>
<td>235.9</td>
<td>525.7</td>
<td>0.223</td>
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<td>50.0</td>
<td>3.398</td>
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<td>0.000</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.133</td>
<td>1007.2</td>
<td>37577</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.409</td>
<td>1002.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
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<td>0.065</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.414</td>
<td>1351.4</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Average % Stabilizer for Lot: 0.309

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

- **Tekisha Dickerson**

### Analyst Signature

- **Avg. Tot. Stabilizers: 0.31 %**

### Comments

- **Stable: YES Unstable**
- **CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number: IND81D070020</th>
<th>D533 / M6 propellant</th>
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<tbody>
<tr>
<td>Date of analysis:</td>
<td>Date: 10 Feb 2012</td>
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<tr>
<td>Other Information</td>
<td></td>
</tr>
<tr>
<td>M6 Propellant</td>
<td></td>
</tr>
<tr>
<td>Sample Data</td>
<td></td>
</tr>
<tr>
<td>#1</td>
<td></td>
</tr>
<tr>
<td>Solvent</td>
<td></td>
</tr>
<tr>
<td>100 ml ACN</td>
<td></td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intg. Area %</td>
</tr>
<tr>
<td>4,4' DNOPA</td>
<td>50.0</td>
<td>0.868</td>
<td>53.7</td>
<td>398.1</td>
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<tr>
<td>2,4-DNOPA</td>
<td>50.0</td>
<td>3.292</td>
<td>916.2</td>
<td>0</td>
</tr>
<tr>
<td>2,2' DNOPA</td>
<td>50.0</td>
<td>4.936</td>
<td>839.4</td>
<td>22071</td>
</tr>
<tr>
<td>2,4' DNOPA</td>
<td>50.0</td>
<td>6.943</td>
<td>1003.3</td>
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</tr>
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<td>4DOPA</td>
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<td>8.309</td>
<td>1616.5</td>
<td>50</td>
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<tr>
<td>2DOPA</td>
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<td>9.362</td>
<td>2912</td>
<td>113.3</td>
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<td>DPA</td>
<td>200.0</td>
<td>10.749</td>
<td>5497.2</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.362</td>
<td>1284.1</td>
<td>355.2</td>
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</tbody>
</table>

Avg. % Stabilizer for Lot: **0.797**

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

**Mike Kile**

**Avg. Tot. Stabilizers**: **0.80 %**

**Analyst Signature**

**Stable**: YES

**Unstable**: NO

**Comments**

**CATEGORY**: A

**Actions to be Taken**

---

*019534*
**STRAIGHT BILL OF LADING**

**NOT NEGOTIABLE**

RECEIVED, subject to the classification and tariffs in effect on the date of issue of this Original Bill of Lading.

The property described below, its apparent good order, except as noted (Container No. of containers of packages unknown), consumed, and declared as indicated below, which said carrier (the present carrier being underrated throughout this contract unless any portion or compartment in possession of the property under the contract agrees to carry to its usual place of delivery of said destination it on its route, otherwise to deliver to another carrier on the route to said destination, it is mutually agreed as to which of all or any of said property over all or any portion of said route to destination, and as to which party or time interested in all or any of said property, that every service line performed hereinunder shall be subject to all the terms and conditions of the Uniform Draymen's Straight Bill of Lading Form (1) in Uniform Freight Classification in effect on the date issued. If this is a rail or rail-wagon shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all its terms and conditions of the said bill of lading, and that the classification or tariff which governs the transportation of this shipment, and the rates forms and conditions are hereby agreed to by the shipper and accepted by him for himself and his assigns.

<table>
<thead>
<tr>
<th>Shipper: Explo Systems, Inc.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 Java Road</td>
<td></td>
</tr>
<tr>
<td>Minden, LA 71055</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>At</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>500 Java Road</td>
<td></td>
</tr>
<tr>
<td>Minden, LA 71055</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>By</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>500 Java Road</td>
<td></td>
</tr>
<tr>
<td>Minden, LA 71055</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Freight Charges: Collect</th>
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</thead>
<tbody>
<tr>
<td>Prepaid</td>
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<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>(Mail or Street Address of Consignee) - For purposes of notification only</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Consignee</td>
<td></td>
</tr>
<tr>
<td>Fed Lic.</td>
<td></td>
</tr>
<tr>
<td>State Llic.</td>
<td></td>
</tr>
<tr>
<td>Exp. Date</td>
<td></td>
</tr>
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<td>Exp. Date</td>
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</table>

<table>
<thead>
<tr>
<th>County</th>
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<tbody>
<tr>
<td>Customer No.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Route</th>
<th></th>
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<tbody>
<tr>
<td>Charge Account of</td>
<td></td>
</tr>
<tr>
<td>Customer P.O. No.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SHIPPED No. of PAK</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PAK</th>
<th>RETURNED No. of UNITS</th>
<th>UNRETURNED No. of PAK</th>
<th>UNRETURNED No. of UNITS</th>
<th>EXEMPTION D O T &gt;&gt;</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>019535</td>
<td>1 1/4 ft</td>
<td>UN0161, Powder, Smokeless, 1.3G, PG II</td>
<td>#112</td>
<td>10.000</td>
<td>112</td>
<td>5.000</td>
<td>EXPLOSIVES 1.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named material are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

<table>
<thead>
<tr>
<th>Signature</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10-23-13</td>
<td></td>
</tr>
</tbody>
</table>

I have received placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Authorized Receiver

<table>
<thead>
<tr>
<th>DOT Hazardous Material Handling Number</th>
<th></th>
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<tbody>
<tr>
<td>019535</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Local Federal Explosives License No.</th>
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</thead>
<tbody>
<tr>
<td>5-LA-119-20-1A-00057</td>
<td></td>
</tr>
</tbody>
</table>

(Shipped)

CONTAINS HAZARDOUS MATERIALS

EXP_001169
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 23 JAN 2013

B/L# 2836 TR# 41067

M-6

IND89D-071039 8 PTS
IND81L-070072 2 PTS
IND83F-070278 11 PTS
IND85F-070587 10 PTS
IND82H-070168 2 PTS
IND81D-070015 1 PT
IND83G-070281 1 PT
IND81G-070061 2 PTS
IND84L-070454 1 PT
IND83F-070274 1 PT
IND85B-070507 1 PT
IND81D-070020 3 PTS
IND84K-070452 1 PT

44 PTS WITH 6 FB@140 LBS PER DRUM

TOTAL 36,960 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND89D071039  
D533 / M6 propellant

Date of analysis: Date: 21 SEP 2012

Other Information  
M6 Propellant

Sample Data  
Solvent

<table>
<thead>
<tr>
<th>Sample</th>
<th>Concentration</th>
<th>Ret Time</th>
<th>Int</th>
<th>Area 1</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml ACN</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Int Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.878</td>
<td>38</td>
<td>188.9</td>
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<td>2,4’ DNDPA</td>
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<td>3.469</td>
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<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.366</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.936</td>
<td>1019.9</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.415</td>
<td>1618.4</td>
<td>80.3</td>
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<td>2NDPA</td>
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<tr>
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<td>75.0</td>
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</table>

**Avg. % Stabilizer for Lot**  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Concentration</th>
<th>Ret Time</th>
<th>Int Area</th>
<th>%</th>
</tr>
</thead>
</table>
| Avg. Tot. Stabilizers | 0.57 % | 0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** MIKE KILE  
**Analyst Signature**

**Avg. Tot. Stabilizers**  
**Stable** YES Unstable

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND85F070587  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 25 AUG 2010

**Other Information**  
Sample Data:  
#1 0.5000 g  
100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.177</td>
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<td>1.2814</td>
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<tr>
<td>2,4-DNPDA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14427.7</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
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<tr>
<td>2NDPA</td>
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<td>12.813</td>
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</tr>
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<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4886.9</td>
<td>225</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
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</table>

**Avg. % Stabilizer for Lot:** 1.262

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson

**Avg. Tot. Stabilizers:** 1.26%

**Analyst Signature**

**Stable:** YES

**Unstable:**

**Comments:** CATEGORY: A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/10/2010
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND85B070507
D533 / M6 propellant

Date of analysis: 16 JULY 2012

Sample Data
Sample #1
0.50 g
100 ml
ACN

Solvent

Other
Information
M6 Propellant

Stabilizer | Conc. Ret. | Intg. | ppm | Time | Area 1 | Intg. | Conc. | Area |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
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<td>2,2’DNDPA</td>
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<td>5.103</td>
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Avg. % Stabilizer for Lot 0.686

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson

Avg. Tot. Stabilizers 0.69%

Analyst Signature
Dickerson

Comments:
CATEGORY: A

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070452  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 13 AUGUST 2012

### Other Information

**Sample Data**  
Solvent:
- Solvent #1: 0.50 g, 100 ml, ACN

### Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ref Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
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<td>1830.9</td>
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<td>1509.1</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.622

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**  
**Avg. Tot. Stabilizers:** 0.62%

**Analyst Signature:**  
**Lab. Supervisor Signature:**

**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Actions to be Taken:**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84L070454  
**D533 / M6 propellant**

**Date of analysis:** Date: 4 MAY 2012

**Other Information**
- Sample Data: Solvent
  - #1: 0.50 g, 100 ml, ACN

#### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tr>
<td>4,4'-DNDPA</td>
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<td>0.867</td>
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<td>2,2' DNDPA</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.147</td>
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<td>8.595</td>
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<td>50.0</td>
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<td>11.99</td>
<td>2133.1</td>
<td>0</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot: 0.521**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

#### Analyst
- **Takisha Dickerson**

**Avg. Tot. Stabilizers:** 0.52 %

**Analyst Signature**

**Stable**: YES  
**Unstable**:

**Comments**
- CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**

**Date of analysis:** 4 April 2012

**Sample Data**
- Solvent: ACN
- **Sample #1:** 0.50 g, 100 ml

**M6 Propellant**

### Standards (ERG-006)

| Stabilizer   | Conc. Ret ppm | Intg. Time | Intg. Area 1 | Intg. Area % | Conc. %
|--------------|---------------|------------|--------------|--------------|--------
| 4,4'-DNDPA   | 50.0          | 0.881      | 40.9         | 93.7         | 0.229  |
| 2,4-DNDPA    | 50.0          | 3.279      | 928          | 0            | 0.000  |
| 2,2'-DNDPA   | 50.0          | 4.666      | 26957        | 26191        | 0.000  |
| 2,4'-DNPA    | 50.0          | 6.571      | 992.8        | 0            | 0.000  |
| DNPA         | 50.0          | 7.798      | 1662.7       | 158.3        | 0.010  |
| 2NDPA        | 50.0          | 8.806      | 2938.9       | 98.9         | 0.003  |
| DPA          | 200.0         | 10.221     | 5774.5       | 1004.4       | 0.070  |
| N-NitrosoDPA | 75.0          | 10.895     | 1475.9       | 0            | 0.000  |

**Avg. % Stabilizer for Lot:** 0.312

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.31 %

**Analyst Signature**

**Stable** YES  
**Unstable**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**  
**Date of analysis:** Date: 27 JULY 2011

### Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
</tr>
<tr>
<td>0.50 g</td>
<td>100 ml</td>
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</table>

### Standards (ERG-006)

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<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4,4'-DNDPA</td>
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### Average % Stabilizer for Lot: 0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**

### Analyst Signature

#### Stable

**YES**

#### Unstable

**Comments**

**CATEGORY:** A

### Lab. Supervisor Signature

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 11 JULY 2012

## Other Information

**M6 Propellant**

**Sample Data**  
**Sample #**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
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## Standards (ERG-006)

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<tr>
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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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</thead>
<tbody>
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<td>4,4'DNDPA</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.843

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.84%

## Analyst Signature

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

EXP_001178
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 FEB 2011

## Other Information

**Sample Data**  
#1 0.5000 g  
100 ml ACN

## Standards (ERG-006)

<table>
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<tr>
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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Area 1 ppm</th>
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<tbody>
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<th>Intg. Area</th>
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<tr>
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Avg. % Stabilizer for Lot: 2.875

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Mike Kile

**Analyst Signature**

**Avg. Tot. Stabilizers**  
2.88 %

**Stable**  
YES  
**Unstable**

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070072  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Sample Data:**  
- **Sample #1:** 0.50 g, 100 ml ACN  

## Standards (ERG-006)

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<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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**Avg. % Stabilizer for Lot:** 0.363

- 0.30% or more is Stability Code A  
- 0.20% -0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.36 %

**Comments**  
**CATEGORY:** A

**Actions to be Taken:**

---

019546  
EXP_001180
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81G070061  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 12 JULY 2011

**Other Information**  
**M6 Propellant**

### Sample Data

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample #</th>
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<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
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</table>

### Standards (ERG-006)

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<th>Intg.</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.71</td>
<td>111</td>
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<td>3.475</td>
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<tr>
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<td>0.006</td>
</tr>
<tr>
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<td>50.0</td>
<td>9.345</td>
<td>1700.8</td>
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<td>167.7</td>
<td>0.010</td>
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<td>2NDPA</td>
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<td>10.629</td>
<td>3041.2</td>
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<td>330.5</td>
<td>0.011</td>
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<td>111.8</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.421

**0.30% or more is Stability Code A**  
**0.20% - 0.29% is Stability Code C**  
**Less than 0.20% is Stability Code D**

### Analyst

**Mike Kile**  
**Avg. Tot. Stabilizers:** 0.42 %

### Analyst Signature

### Stable | YES | Unstable

### Comments

**CATEGORY:** A

### Lab. Supervisor Signature

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number**: IND81D070015  
**Date of analysis**: Date: 20 OCT 2010

**D533 / M6 propellant**

**Sample Data**
- **Sample #**: #1
- **Concentration**: 0.5000 g
- **Volume**: 100 ml
- **Solvent**: ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
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<td>2,2'-DNDPA</td>
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<tr>
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**Avg. % Stabilizer for Lot**: 0.854

- **0.30% or more is Stability Code A**
- **0.20% -0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst**: Kisha Dickerson  
**Analyst Signature**

**Avg. Tot. Stabilizers**: 0.85%

**Comments**:  
**CATEGORY**: A

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81D070020

Date of analysis: Date: 10 Feb 2012

Other Information
M6 Propellant

Sample Data
Sample #

<table>
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<tr>
<th>Solvent</th>
<th>#1</th>
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<th>100 ml</th>
<th>ACN</th>
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Standards (ERG-006)

<table>
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<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
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<th>Conc. %</th>
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Avg. % Stabilizer for Lot: 0.797

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Mike Kile
Avg. Tot. Stabilizers: 0.80%

Analyst Signature

Stable: YES Unstable

Comments

Lab. Supervisor Signature

CATEGORY: A

Actions to be Taken

EXP_001183
### STRAIGHT BILL OF LADING

**NOT NEGOTIABLE**

RECEIVED, subject to the conditions and terms in effect on the date of the date of this Original Bill of Lading.

The property described below, in original package, except as noted (contents and condition of containers or packages unknown), is carried on the vessel, the vessel carrying the cargo as understood throughout the contract, subject to any provision or consignment in possession of the property under the condition agreed to carry to its usual place of delivery at such destination. It is subject to delivery at another consignee on the vessel or said destination. It is expressly agreed, as in each of all of the said property, that no person or persons, or any of them, interested in all or any of said property, shall be held responsible for any loss or damage to said property, nor for any act, omission or neglect on the part of any consignee or consignor, or any other person or persons, and such responsibility is expressly reserved to the seller and consignee and any authorized agent thereof.

Shippers hereby certify that they are familiar with all the terms and conditions of the said bill of lading, and that they understand the classifications and conditions of the goods which are to be transported, and that they will comply with the requirements of the Department of Transportation.

Shippers: Express Systems Inc.

1600 Jave Road

Minden, LA 71055

Shippers No. 2837

Shipping Date: 1/26/10

Purchase Order No.

Location No. 283

**Freight Charges: Collect**

Prepaid Y/N: Y

<table>
<thead>
<tr>
<th>Consigned to</th>
<th>Fed Lic.</th>
<th>State</th>
<th>Exp. Date</th>
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<tbody>
<tr>
<td>X60-865502-00</td>
<td>S-156</td>
<td>019550</td>
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**Obligee**

<table>
<thead>
<tr>
<th>Customer P.O. No.</th>
<th>Ref. No.</th>
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<tbody>
<tr>
<td>P0000055-11250560</td>
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<table>
<thead>
<tr>
<th>UN0161, Powder, Smokeless, 1.3C, PG II</th>
<th>#112</th>
<th>EXPLOSIVES 1.3</th>
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<tbody>
<tr>
<td>Truck No.</td>
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<td></td>
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<tr>
<td>Trailer No.</td>
<td>41021</td>
<td></td>
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<tr>
<td>Weight</td>
<td>29,000</td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the instructions or regulations of the Department of Transportation.

**Signature**

Dated: 1/26/10

Explosive Systems, Inc.

1600 Jave Road

Minden, Louisiana 71055

(Shippers)

**DOT Hazardous Material Handling Number**

*Not applicable*
AUSTIN POWDER PACKING LIST

SHIPPMENT DATE 24 JAN 2013

R/L# 2837  TRL 41021

M-6

<table>
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<tr>
<th>Item Code</th>
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<tbody>
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<tr>
<td>IND84G-070326</td>
<td>7 PY5</td>
</tr>
<tr>
<td>IND85B-070507</td>
<td>1 PT</td>
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<td>IND84L-070454</td>
<td>1 PY</td>
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<td>IND81F-070024</td>
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<td>IND83F-070271</td>
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<td>IND81D-070020</td>
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<td>IND82C-070110</td>
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<td>IND83M-070322</td>
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43 PTS WITH 6 FB @ 140 LBS PER DRUM

TOTAL 36,120 LBS

[Signature]

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 NOV 2010

**Other Information**

**M6 Propellant**

Sample Data

| Solvent | #1 | 0.5000 g | 100 ml | ACN |

## Standards (ERG-008)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
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</table>

## Results

Avg. % Stabilizer for Lot: 0.504

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**

**Stable**  
**Unstable**

**Comments**

**Lab. Supervisor Signature**

**ACTION:**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84L070454  
**D533 / M6 propellant**

**Date of analysis:**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M6 Propellant**

**Standards (ERG-006)**

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<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Conc.</th>
<th>Intg.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.867</td>
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<td>2,4' DNDPA</td>
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**Avg. % Stabilizer for Lot:** 0.521

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.52%

**Analyst Signature**  
**Stable** YES **Unstable**

**Lab. Supervisor Signature**  
**Comments** CATEGORY: A  
**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 3 MAY 2012

**Other Information**  
**Sample Data**  
**Solvent**

<table>
<thead>
<tr>
<th>Sample</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

#### Standards (ERG-006)

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<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
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</thead>
<tbody>
<tr>
<td>ppm Time</td>
<td>Area %</td>
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<td>4NDPA</td>
<td>50.0 8.593 1969.2</td>
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<td>2NDPA</td>
<td>50.0 9.688 3527.8</td>
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<td>DPA</td>
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<td>.750 11.897 1704.5</td>
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**Avg. % Stabilizer for Lot:** 0.364

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
0.36%

**Analyst Signature**

**Stable**  
**YES**  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND83M070322  D533 / M6 propellant

Date of analysis:  Date: 12 APR 2012

Other Information
M6 Propellant

Sample Data
Sample #
Solvent
#1  0.50 g  100 ml  ACN

Standards (ERG-006)

<table>
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<th>Intg. ppm</th>
<th>Time</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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<td>0.047</td>
<td></td>
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<tr>
<td>4NDPA</td>
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<td>8.012</td>
<td>1726.9</td>
<td>66.2</td>
<td>0.004</td>
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<td>113.4</td>
<td>0.003</td>
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<td></td>
<td></td>
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<tr>
<td>DPA</td>
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<td>10.394</td>
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<td>978.3</td>
<td>0.063</td>
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<td></td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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<td>1530.7</td>
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<td>0.000</td>
<td></td>
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<td></td>
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</tbody>
</table>

Avg. % Stabilizer for Lot 2.112

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst  Kisha Dickerson

Avg. Tot. Stabilizers 2.11 %

Analyst Signature

Stable  YES  Unstable

Comments  CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC Propellant Stability Report

**Lot Number:** IND83G070281  
**D533 / M6 Propellant**

**Date of Analysis:** Date: 4 April 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.881</td>
<td>40.9</td>
<td>93.7</td>
<td>0.229</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.279</td>
<td>928</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>4.66</td>
<td>25957</td>
<td>26191</td>
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</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>6.571</td>
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<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>7.798</td>
<td>1662.7</td>
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<td>0.010</td>
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<td>98.9</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
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<td>10.221</td>
<td>5774.5</td>
<td>1004.4</td>
<td>0.070</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>10.895</td>
<td>1475.9</td>
<td>0</td>
<td>0.000</td>
</tr>
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</table>

## Analyst

**Analyst:** Takisha Dickerson  
**Average Total Stabilizers:** 0.31 %

**Comments**

- **Category:** A
- **Actions to be Taken:**

---

**Average % Stabilizer for Lot:** 0.312

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND83F070276  
D533 / M6 propellant  

Date of analysis:  
Date: 4 Sep 2012  

Other Information  
M6 Propellant  

Sample Data  
Solvent  
#1  0.50 g  100 ml  ACN  

Standards (ERG-006)  
Sample #  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Inlg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>578.6</td>
<td>1.186</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
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<td>0.000</td>
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<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>23990</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1588.8</td>
<td>40.6</td>
<td>0.003</td>
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<td></td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
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<td>88.7</td>
<td>0.003</td>
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<td>812.6</td>
<td>0.057</td>
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<td>75.0</td>
<td>12.757</td>
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<td>0.000</td>
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Avg. % Stabilizer for Lot  
1.249  

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D  

Analyst  
Mike Kile  

Avg. Tot. Stabilizers  
1.25%  

Analyst Signature  

Stable  
YES   | Unstable  

Comments  
CATEGORY: A  

Lab. Supervisor Signature  

Actions to be Taken  

Form #158  
Original Print Date: 07/19/2010  

EXP_001191
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND83D070271  
D533 / M6 propellant

Date of analysis:  
Date: 4 April 2012

Other Information  
M6 Propellant

Sample Data  
Sample #1  0.50 g  100 ml  ACN

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.881</td>
<td>40.9</td>
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<td>2,4-DNDPA</td>
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<td>0.000</td>
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<td>2,2’ DNDPA</td>
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<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>6.571</td>
<td>992.8</td>
<td>34.8</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>7.798</td>
<td>1662.7</td>
<td>61.8</td>
<td>0.004</td>
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<td>8.806</td>
<td>2938.9</td>
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<td>10.221</td>
<td>5774.5</td>
<td>696.6</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>10.895</td>
<td>1475.9</td>
<td>0</td>
<td>0.000</td>
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</table>

Avg. % Stabilizer for Lot: 0.333

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson  
Avg. Tot. Stabilizers: 0.33 %

Analyst Signature  
Stable: YES  
Unstable: 

Comments: CATEGORY: A

Lab. Supervisor Signature  
Actions to be Taken

Form #158  
Original Print Date: 07/19/2010

019558  
EXP_001192
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**  
**Date of analysis:** Date: 1 FEB 2011

### Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Weight</th>
<th>Volume</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
<td>100 ml</td>
<td>ACN</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>% Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDA</td>
<td>50.0</td>
<td>4.156</td>
<td>1118</td>
<td>2540.4</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
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<tr>
<td>2,2'-DNDA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
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</table>

**Avg. % Stabilizer for Lot:** 2.875

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

**Mike Kile**

<table>
<thead>
<tr>
<th>Analyst Signature</th>
<th>Avg. Tot. Stabilizers</th>
<th>Stable</th>
<th>Unstable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.88 %</td>
<td>YES</td>
<td>Unstable</td>
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**Comments**

**CATEGORY:** A

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82K070175  D533 / M6 propellant
Date of analysis: Date: 6 AUG 2010

Other Information
Sample Data
Solvent
M6 Propellant
#1  0.5000 g  100 ml  ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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</thead>
<tbody>
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<td></td>
<td>ppm</td>
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</tr>
<tr>
<td>2,4-DNDPA</td>
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</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. % Stabilizer for Lot</td>
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</tbody>
</table>

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst        Mike Kile
Analyst Signature
Avg. Tot. Stabilizers 1.46%
Stable YES Unstable
Comments CATEGORY: A
Actions to be Taken

Form #158
Original Print Date: 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND82D070110
D533 / M6 propellant

## Date of analysis:
Date: 27 JULY 2011

### Sample Data
- **Solvent**
  - #1: 0.50 g, 100 ml, ACN

### Standards (ERG-006)

<table>
<thead>
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<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
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<td></td>
<td></td>
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</table>

**Avg. % Stabilizer for Lot:** 0.415

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- Mike Kile

### Analyst Signature
- **Stable**: YES
- **Unstable**: No

### Comments
- **CATEGORY**: A

### Actions to be Taken

---

Form #158

Original Print Date: 07/19/2010

019561

EXP_001195
# HPLC Propellant Stability Report

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of Analysis:**  
**Date:** 10 Feb 2012

**Other Information:**

- **Sample Data**
  - #1
  - 0.50 g
  - 100 ml
  - ACN

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time (s)</th>
<th>Area (s)</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
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<td>398.1</td>
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<tr>
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<td>50.0</td>
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<td>4.935</td>
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<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.309</td>
<td>1616.5</td>
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<td>0.003</td>
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<td>9.362</td>
<td>2912</td>
<td></td>
<td>113.3</td>
<td>0.004</td>
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<td>DPA</td>
<td>200.0</td>
<td>10.749</td>
<td>5497.2</td>
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<td>668</td>
<td>0.048</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.362</td>
<td>1264.1</td>
<td></td>
<td>355.2</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.797

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.80%

**Analyst Signature**  
**Stable:** YES, **Unstable:**

**Comments:**  
**CATEGORY:** A  
**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81F070024  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 9 DEC 2011

## Other Information

**Sample Data**  
*Solvent: ACN*  
*Sample: #1*  
*Weight: 0.50 g*  
*Volume: 100 ml*

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
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<td>50.0</td>
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</tr>
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<td>4NDPA</td>
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<td>3112</td>
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<td>11.1276</td>
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<td>50.0</td>
<td>12.035</td>
<td>1482.1</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.582

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**TAKISHA DICKERSON**  
**Avg. Tot. Stabilizers:** 0.58 %  
**Stable:** YES  
**Unstable:**

## Comments

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**

**Date of analysis:**

**Sample Data**  
**Solvent**  
##1 0.50 g 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>ppm Time Area</td>
<td>Time Area</td>
<td>%</td>
<td>%</td>
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<tr>
<td>4,4' DNDPA</td>
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<td>525.7 0.223</td>
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<td>2,4-DNDPA</td>
<td>50.0 3.398 913.2</td>
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<td>0.000</td>
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<td>2,2' DNDPA</td>
<td>50.0 5.133 1007.2</td>
<td>37577 0.000</td>
<td>0.000</td>
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<td>50.0 7.409 1002.4</td>
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<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0 8.917 1612.8</td>
<td>186.9 0.012</td>
<td>0.010</td>
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<td>50.0 10.112 2882.2</td>
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<td>200.0 11.607 5642.3</td>
<td>917.9 0.065</td>
<td>0.000</td>
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<td>N-NitrosoDPA</td>
<td>75.0 12.414 1351.4</td>
<td>0.000</td>
<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.309

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.31 %

**Analyst Signature**  
Stable YES Unstable

**Comments**  
CATEGORY: A

**Actions to be Taken**
STRAIGHT BILL OF LADING

CONTRACT PRICE

NO RECONSIDERATION

CONTAINS HAZARDOUS MATERIALS

SHIPPER: Expo Systems, Inc.
1600 Jevne Road
Minden, LA 71055

AT

By APC

Freight Charges: Collect

Prepaid

Location No. 232

Consignee:

Route

Charge Account No. 70-332-70-7-7948

Customer P.O. No.

Shipper’s No. 2258

Shipping Date: 1/24/13

Purchase Order No.

Consigned to

Destination: North Dakota

State

County

City

This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Mile No.

FOR CHEMICAL EMERGENCY CALL 800-222-1222;
CHEMICAL REACTIONS CALL 911 OR LOCAL EMERGENCY SERVICES;
ACCIDENT CALL 911 OR LOCAL EMERGENCY SERVICES;
CALL CHEMICAL SPILL FIRST.

MATERIALS HANDLING NUMBER:

Hazardous Material Handling Number:

Certified by:

AUTHORIZED RECEIVER.

EXP_001199
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 24 JAN 2013

B/L# 2839  TRL 41067

M-6

IND82K-070175  5 PTS
IND83G-070281  8 PTS
IND86E-070616  4 PTS
IND81F-070024  5 PTS
IND83M-070322  6 PTS
IND83K-070319  1 PT
IND83F-070276  6 PTS
IND82D-070110  1 PT
IND82H-070168  3 PTS
IND84G-070326  3 PTS
IND83A-070227  1 PT

43 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 36,120 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 NOV 2010

**Other Information**  
**M6 Propellant**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
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</tbody>
</table>

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Conc. Area</th>
</tr>
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<tr>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>%</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.635</td>
<td>736.3</td>
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<td>50.0</td>
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<td>200.0</td>
<td>16.583</td>
<td>4078.5</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
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</table>

<table>
<thead>
<tr>
<th>Intg. Area</th>
<th>%</th>
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</thead>
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<tr>
<td>654.4</td>
<td>0.482</td>
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<td>13022.2</td>
<td>0.000</td>
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<tr>
<td>221.2</td>
<td>0.022</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.504

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50 %  
**Analyst Signature**

**Comments:**

- **Stable:** YES  
- **Unstable:**

**Lab. Supervisor Signature**

**Actions to be Taken**

**CATEGORY:**  

---

*Form #158*

EXP_0001201
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND84G070326  |  D533 / M6 propellant
---|---
Date of analysis: | Date: 3 MAY 2012

### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>4,4’ DNDPA</td>
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<td>0.867</td>
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<td>3.335</td>
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<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.007</td>
<td>4986.7</td>
<td>23068</td>
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<td>50.0</td>
<td>7.137</td>
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<td>50.0</td>
<td>8.593</td>
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<td>75.0</td>
<td>11.897</td>
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Avg. % Stabilizer for Lot: 0.364

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

### Analyst
Takisha Dickerson

### Analyst Signature

### Avg. Tot. Stabilizers
0.36%

### Stable
YES

### Comments
CATEGORY: A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83A070227  
**D533 / M6 propellant**

**Date of analysis:** Date: 1 FEB 2011

**Sample Data**

<table>
<thead>
<tr>
<th>#</th>
<th>Sample</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5000 g</td>
<td>100 ml ACN</td>
</tr>
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</table>

**M6 Propellant**

**Standards (ERG-006)**

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<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>2436.1</td>
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<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>22347.3</td>
<td>1.876</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>118.9</td>
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<td>11.73</td>
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<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>321</td>
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</table>

- **Avg. % Stabilizer for Lot:** 2.133

**0.30% or more is Stability Code A**
**0.20% - 0.29% is Stability Code C**
**Less than 0.20% is Stability Code D**

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.13 %

**Analyst Signature**

**Stable**  
**Comments:** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

EXP_001203
**HPLC PROPELLANT STABILITY REPORT**

Lot Number: IND83F070276  
D533 / M6 propellant

Date of analysis:  
Date: 4 Sep 2012

### Other Information

- **Sample Data**  
  Sample #1  
  0.50 g  
  100 ml  
  ACN

### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area 1</th>
<th>Intg. Conc. Area</th>
<th>%</th>
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<tbody>
<tr>
<td>4,4’ DNDPA</td>
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<td>50.0</td>
<td>3.418</td>
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<td>5.22</td>
<td>777.3</td>
<td>23990</td>
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<td>7.622</td>
<td>980.5</td>
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<td>0.000</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>40.6</td>
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<td>2826.3</td>
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<td>12.757</td>
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### Avg. % Stabilizer for Lot  
1.249

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

- **Mike Kile**

### Average Total Stabilizers

1.25 %

### Analyst Signature

**Stable**  
**YES**  
**Unstable**

### Comments

**CATEGORY:** A

### Lab. Supervisor Signature

### Actions to be Taken

---

Form #158

Original Print Date: 07/19/2010

EXP_001204
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83K070319  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 15 JUNE 2012

## Other Information

**Sample Data**  
**Sample #1**  
**Solvent:** ACN  
**0.50 g**  
**100 ml**

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.141</td>
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<td>8.937</td>
<td>1639.5</td>
<td>159.8</td>
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<td>12.44</td>
<td>1376.8</td>
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## Avg. % Stabilizer for Lot

0.694

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.69%

## Analyst Signature

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 12 APR 2012

**Other Information**  
**Sample Data**  
**Solvent**  
#1 0.50 g 100 ml ACN

### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
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<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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<tbody>
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<td>9.091</td>
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<td>75.0</td>
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<table>
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<th>Intg.</th>
<th>Conc. Area %</th>
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<td>978.3</td>
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<td></td>
<td>0</td>
<td>0.000</td>
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### Avg. % Stabilizer for Lot

**2.112**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.11 %

**Analyst Signature**  
**Stable:** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**

**Date of analysis:**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
</tr>
<tr>
<td>0.50 g</td>
<td>100 ml</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>Intg. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.881</td>
<td>40.9</td>
<td>93.7</td>
<td>0.229</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.279</td>
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<td>0</td>
<td>0.000</td>
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<td>2,2'-DNDPA</td>
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<td>4.66</td>
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<td>26191</td>
<td>0.000</td>
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<td>2,4'-DNPDA</td>
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<td>6.571</td>
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<td>0.000</td>
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<td>4-NDPDA</td>
<td>50.0</td>
<td>7.798</td>
<td>1662.7</td>
<td>158.3</td>
<td>0.10</td>
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<td>0.003</td>
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<td>10.221</td>
<td>5774.5</td>
<td>1004.4</td>
<td>0.070</td>
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<tr>
<td>N-NitosoDPA</td>
<td>75.0</td>
<td>10.895</td>
<td>1475.9</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** **0.312**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers:** **0.31 %**

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND82H070168  **Date of analysis:** 1 FEB 2011  **D533 / M6 propellant**

## Sample Data

| Solvent | #1 | 0.5000 g | 100 ml | ACN |

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Int. Area</th>
<th>Int. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
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<td>0.228</td>
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<tr>
<td>2,4'-DNDPA</td>
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<td>9.388</td>
<td>1191.2</td>
<td>3123.1</td>
<td>2.622</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>10.987</td>
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<tr>
<td>4NDPA</td>
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<tr>
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<td>13.939</td>
<td>5852.1</td>
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<td>0.014</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
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<td>0.000</td>
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<tr>
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<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>985.4</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  **Avg. Tot. Stabilizers:** 2.88 %

**Analyst Signature**  **Stable:** YES  **Unstable**

**Lab. Supervisor Signature**  **Comments:** CATEGORY: A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82D070110  |  D533 / M6 propellant
---|---
Date of analysis:  |  Date: 27 JULY 2011

### Sample Data
- Sample: #1 0.50 g  100 ml  ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
<td>437.7</td>
<td>0.388</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
<td>22925</td>
<td>0.000</td>
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<tr>
<td>2,4' DNBPA</td>
<td>50.0</td>
<td>7.842</td>
<td>1020.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
<td>1634.2</td>
<td>119.1</td>
<td>0.007</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.693</td>
<td>2956.2</td>
<td>134.9</td>
<td>0.005</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
<td>5630.5</td>
<td>218.4</td>
<td>0.016</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
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### Stabilizer Concentration

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. Area %</th>
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<td>0</td>
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<td>77.4</td>
<td>22925</td>
<td>0.000</td>
</tr>
<tr>
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<td>7.842</td>
<td>1020.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
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<td>9.392</td>
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<td>119.1</td>
<td>0.007</td>
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<td>10.693</td>
<td>2956.2</td>
<td>134.9</td>
<td>0.005</td>
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<tr>
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<td>12.201</td>
<td>5630.5</td>
<td>218.4</td>
<td>0.016</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
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### Avg. % Stabilizer for Lot

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
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<td>0.694</td>
<td>112.8</td>
<td>437.7</td>
<td>0.388</td>
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<td>2,4-DNDPA</td>
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<td>2,2' DNDPA</td>
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<td>5.339</td>
<td>77.4</td>
<td>22925</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNBPA</td>
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<td>1020.3</td>
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<td>9.392</td>
<td>1634.2</td>
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<td>10.693</td>
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<td>0.005</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
<td>5630.5</td>
<td>218.4</td>
<td>0.016</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Analyst

- Mike Kile

### Analyst Signature

- Stable

### Lab. Supervisor Signature

- Comments: CATEGORY: A

### Actions to be Taken

---

Form #158  |  Original Print Date: 07/19/2011
019575  |  EXP_001209
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 AUG 2010

## Other Information

**Sample Data**  
**Solvent**
- #1 0.5000 g  
- 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>1</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>4.91</td>
<td>382.3</td>
<td>5134.1</td>
<td>1.343</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>9.825</td>
<td>437</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>11.341</td>
<td>632.4</td>
<td>87.4</td>
<td>0.014</td>
</tr>
<tr>
<td>4NDPA</td>
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<td>11.95</td>
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<td>0.000</td>
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<td>0.017</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.465

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.46 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81F070024  
**Sample Data:** #1  
**Date of analysis:** 9 DEC 2011  
**D533 / M6 propellant**  
**Solvent:** ACN  
**M6 Propellant**  
**Sample #**  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area %</th>
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<tbody>
<tr>
<td>4,4'-DNDPA</td>
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<td>2,4-DNDPA</td>
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<tr>
<td>2,2'-DNDPA</td>
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<td>5.039</td>
<td>624.7</td>
<td></td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.221</td>
<td>1076.5</td>
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</tr>
<tr>
<td>4NDPA</td>
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<td>8.681</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.582

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.58 %

**Analyst Signature**  
**Stable:** YES | Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED - subject to the classification, rate terms in effect on the date of the issuance of this Original Bill of Lading

The property described below is subject to the classification rules in effect on the date of the issuance of this Original Bill of Lading, and subject to the rate terms as indicated below. All rates and charges are subject to change without notice. The consignee may require the release of the property to a third party at any time, provided that the third party agrees to comply with all the terms and conditions of the Uniform Commercial Code. The consignee is responsible for any damages incurred in the handling, transportation, or storage of the property.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect
Prepaid

Shipper’s Name: M2 2840

Shipping Date: 1/25/15

Purchase Order No.: 2019578

Location No.: 5226/2319

Consignee: [Redacted]
Fed. Lic.: 537-03-1344

Exp. Date: 5/1/15

State Lic.: [Redacted]

Customer No.: [Redacted]

(Mail or Street Address of Caregiver — For purposes of notification only)

Charge Account No.: [Redacted]

Customer P.O. No.: Rel. No.: [Redacted]

The property described below is subject to the classification rules in effect on the date of the issuance of this Original Bill of Lading, and subject to the rate terms as indicated below. All rates and charges are subject to change without notice. The consignee may require the release of the property to a third party at any time, provided that the third party agrees to comply with all the terms and conditions of the Uniform Commercial Code. The consignee is responsible for any damages incurred in the handling, transportation, or storage of the property.

Invoice No.: [Redacted]

Per: [Redacted]

Local Hazardous Material Identification No.: 5-BA-119-20-1A/20057

Local Materials: Explosives 1.3

Explosives 1.3

Net Weight: 39.000

Not Exposed Weight: 39.000

The above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature: [Redacted]

[Explo Systems, Inc.
1600 Java Road
Minden, LA 71055
Phone: 257-0700]

[Local Materials: Explosives 1.3
Identification No.: 5-BA-119-20-1A/20057
Local Materials: Explosives 1.3
Identification No.: 5-BA-119-20-1A/20057]

[alis4/25/13]

[Charles Cruz]

[Local Materials: Explosives 1.3
Identification No.: 5-BA-119-20-1A/20057]

[alis4/25/13]

[Charles Cruz]
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 24 JAN 2013

B/L# 2840 TRL 40947

M-6

IND82K-070175  10 PTS
IND86E-070616  5 PTS
IND83G-070281  2 PTS
IND83M-070322  9 PTS
IND83K-070319  4 PTS
IND82D-070110  1 PT
IND83F-070276  3 PTS
IND84G-070326  5 PTS
IND83F-070274  4 PTS

43 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 36,120 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 AUG 2010

## Other Information

**Sample Data**  
*Sample #1*  
**Solvent:** ACN  
**Mass:** 0.5000 g  
**Volume:** 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. %</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>1</td>
<td>382.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>4.91</td>
<td>437</td>
<td>0.000</td>
<td>1.343</td>
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<td>14.999</td>
<td>558.4</td>
<td>254.6</td>
<td>0.066</td>
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## Analysis

**Avg. % Stabilizer for Lot:** 1.465

- **0.30% or more is Stability Code A**
- **0.20% - 0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.46%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A  
**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 27 JULY 2011

#### Sample Data

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
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#### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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<tbody>
<tr>
<td>4,4' DNDA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
<td>437.7</td>
</tr>
<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
<td>0</td>
</tr>
<tr>
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</tr>
<tr>
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<td>12.201</td>
<td>5630.5</td>
<td>218.4</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
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**Avg. % Stabilizer for Lot:** 0.415

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42 %  
**Analyst Signature:**  
**Stable** YES Unstable

#### Comments

**Category:** A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

EXP_001215
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**Date of analysis:** Date: 27 JULY 2011  
**Other Information:** M6 Propellant  
**Sample Data:**  
- Sample: #1  
- Weight: 0.50 g  
- Volume: 100 ml  
- Solvent: ACN

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tr>
<td>4,4’ DNDPA</td>
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<td>0.000</td>
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## Analysis

| Analyst      | Takisha Dickerson  
|---------------|-------------------|
| Avg. Tot. Stabilizers | 0.59 %  
| Stable | YES | Unstable |
| Comments | CATEGORY: | A |
| Actions to be Taken | | |
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**  
**Date of analysis:**  4 April 2012

**Other Information**  
M6 Propellant

**Sample Data**  
| Solvent | #1 | 0.50 g | 100 ml | ACN |

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
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Avg. % Stabilizer for Lot: 0.312

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.31 %

**Analyst Signature**  
Stable YES Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**Date of analysis:** Date: 12 APR 2012  
**Other Information:**  
**M6 Propellant**  
**Sample Data**  
| Solvent | #1 | 0.50 g | 100 ml | ACN |

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<th>Sample #</th>
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<tr>
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<td>--------</td>
<td>------</td>
<td></td>
<td></td>
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**Avg. % Stabilizer for Lot:** 2.112

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.11 %  
**Stable** YES Unstable  
**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND83K070319  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 15 JUNE 2012

**Other Information**  
**Sample Data**  
**Solvent**

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<td>100 ml</td>
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**Standards (ERF-008)**

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<td>0</td>
<td>0.000</td>
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<tr>
<td>159.8</td>
<td>0.010</td>
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<tr>
<td>174.6</td>
<td>0.006</td>
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<td>138.2</td>
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<tr>
<td>0</td>
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<td>0</td>
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**Avg. % Stabilizer for Lot**  
0.694

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
0.69 %

**Analyst Signature**

**Stable**  
YES  
**Unstable**

**Comments**  
**CATEGORY:**  A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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Avg. % Stabilizer for Lot: 1.249

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Mike Kile

Avg. Tot. Stabilizers: 1.25%

Stable: YES, Unstable

Comments: CATEGORY: A

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 3 MAY 2012

**Other Information**  
**M6 Propellant**

**Sample Data**  
**Sample #1**  
**Solvent:** ACN  
**0.50 g**  
**100 ml**

## Standards (ERG-006)

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<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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**Avg. % Stabilizer for Lot**  
**0.364**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
**0.36 %**

**Analyst Signature**  
Stable YES Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken

**Page:** #450  
**019587**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND86E070616
D533 / M6 propellant

Date of analysis: Date: 19 NOV 2010

Other Sample Data
Information
M6 Propellant

Sample #
Solvent
#1 0.5000 g 100 ml ACN

Standards (ERG-006)

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Intg. Conc. Area %

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</table>

Avg. % Stabilizer for Lot 0.504

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst Kisha Dickerson
Analyst Signature

Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken

Form #158
019588

CALD411-295466
EXP_001222
### STRAIGHT BILL OF LADING

**RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.**

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereof performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth in Uniform Freight Classification in effect on the date hereof, it this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper’s No.:** 2853

**Shipping Date:** 3/12/13

**Purchase Order No.:**

**Location No.:** 3416

**Freight Charges:** Collect

### Consignee Information

- **Mail or Street Address of Consignee:** For purposes of notification only

- **Fed Lic.:** 541464-1055-020-00037

- **Exp. Date:** 5/1/15

- **State Lic.:** Exp. Date

- **Customer No.:**

### Charge Account of

- **Customer P.O. No.:**

### Route

- **Route:**

### This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

### Signature

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT**

**IN THE USA CALL 800-424-9300 IN CANADA (ERP #2-0040) 800-551-3639 ELSEWHERE CALL (703) 527-8877**

**Per DOT Hazardous Material Handling Number**

**Local Federal Explosives License No. 5-LA-119-20-1A-00057**

(Shipper)
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 12 MAR 2013

B/L# TRL 980210

M-6

IND87H-070847  11 PTS
IND86F-070620  4 PTS
IND84K-070448  8 PTS
IND86M-070673  8 PTS
IND80M-070009  7 PTS
IND82D-070113  4 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
**EXPLO SYSTEMS, INC.**

Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

**SECTION I - PRODUCT IDENTIFICATION**

PRODUCT NAME: Propellant, Explosive, Solid, Wetted

Technical Information Phone No.: 318.382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
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<td>ACGIH TLV</td>
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<td>Diphenylamine</td>
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<td>Potassium Sulfate</td>
<td>7778-80-5</td>
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<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH

2 2

FLAMMABILITY

4

PHYSICAL HAZARD

4

PERSONAL PROTECTION

[B]

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep away from heat, sparks, open flame...
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.

Page 2 of 3
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explo systems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States, the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND80M070009  D533 / M6 propellant

Date of analysis: Date: 20 SEP 2010

Other Information

Sample Data
Solvent

| # | 0.5000 g | 100 ml | ACN |

M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm Time Area</td>
<td>Area %</td>
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<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
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<td>50.0</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
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<tr>
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<td>50.0</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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</tbody>
</table>

Avg. % Stabilizer for Lot: 0.670

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Kisha Dickerson  Avg. Tot. Stabilizers: 0.67 %
Analyst Signature: Stable  YES Unstable  Comments: CATEGORY: A
Lab. Supervisor Signature:  Actions to be Taken

Load 1  2853
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070113  
**D533 / M6 propellant**  
**Date of analysis:** Date: 6 JAN 2012

## Other Information
- **Sample Data**
  - Sample #1
  - Solvent
  - 0.50 g
  - 100 ml
  - ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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<tbody>
<tr>
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<td>0.85</td>
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<td>0</td>
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| Avg. % Stabilizer for Lot | 0.336 |

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst
- **TAKISHA DICKERSON**  
**Avg. Tot. Stabilizers:** 0.34 %

## Analyst Signature
- Stable **YES** Unstable

## Comments
- CATEGORY: A

## Lab. Supervisor Signature
- Actions to be Taken

---

Form #158  
Original Print Date: 07/10/2010

019596  
EXP_001230
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070448  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Sample Data:**  
- **Solvent:** ACN  
- **Sample #1:** 0.5000 g, 100 ml  

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
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<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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**Avg. % Stabilizer for Lot:** 3.185

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 3.19 %  
**Analyst Signature**  
**Stable:** YES | **Unstable**

**Comments**  
**Lab. Supervisor Signature**  
**Actions to be Taken**

---

Form #158  
**Original Print Date:** 07/19/2010  
**EXP_001231**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**

**Date of analysis:**  7 FEB 2012

## Sample Data

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<th>Conc.</th>
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<th>Intg.</th>
<th>Solvent</th>
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<tr>
<td>#1</td>
<td>0.50</td>
<td>0</td>
<td>100 ml</td>
<td>ACN</td>
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</table>

## Standards (ERG-006)

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<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Area</td>
<td>ppm</td>
<td>Time</td>
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<td>0</td>
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<td>1363.1</td>
<td>727.3</td>
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## Analyst

**TAKISHA DICKERSON**

**Avg. Tot. Stabilizers:** 0.97%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments:**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

**Form #158**  
**Original Print Date:** 07/10/2010
CONTAINS HAZARDOUS MATERIALS

STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) - consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is subject to all terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (8) in Uniform Freight Classification in effect on the date hereof. It is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Freight Charges: Collect

Prepaid

Location No. 2416

At

Shipper’s No. 2855

Shipping Date 3/12/13

Purchase Order No.

Consigned to

Destination

County

Route

Charge Account of

Customer P.O. No.

Rel. No.

(Paragraph Address of Consignee — For purposes of notification only)

Fed Lic. 5-112-10 3-20-52-00139

Exp. Date 5/1/15

State Lic.

Exp. Date

Customer No.

EXPLORIVES 1.3

No. of Pkg. No. of Units

UN0161, Powder, Smokeless, 1.3C, PG II

RETURNED No. of Pkg.

RETURNED No. of UNITS

EMERGENCY RESPONSE GUIDE NO.

EXEMPTION CODE

H M

Placards Applied to Railroad or Motor Vehicle

Truck No. 7306

Trailer No. 6840020

Mileage

Total 250 1270

Packages

Gross Weight # 37,000

Net Explosive Weight 35,240

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC -- DAY OR NIGHT
IN THE USA CALL 800-424-9300
IN CANADA (ERP) 2-2040 600-551-9836
ELSEWHERE CALL (703) 527-9887

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

Date 3/12/13

Q CONSIGNEE Q CARRIER

By

AUTHORIZED RECEIVER

019599

EXP_001233
**MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)**

(Read Instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

<table>
<thead>
<tr>
<th>SECTION 1 - DOCUMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIGIN</td>
</tr>
<tr>
<td>a. CARRIER/GOVERNMENT ORGANIZATION</td>
</tr>
<tr>
<td>b. DATE/TIME OF INSPECTION</td>
</tr>
<tr>
<td>c. LOCATION OF INSPECTION</td>
</tr>
<tr>
<td>d. OPERATOR(S) NAME(S)</td>
</tr>
<tr>
<td>e. OPERATOR(S) LICENSE NUMBER(S)</td>
</tr>
<tr>
<td>f. MEDICAL EXAMINER'S CERTIFICATE*</td>
</tr>
</tbody>
</table>

| a. MILITARY HAZMAT ENDORSEMENT | YES | NO |
| b. VALID LEASE* | a. DRIVER'S VEHICLE INSPECTION REPORT* | YES | NO |
| c. ROUTE PLAN | f. COPY OF 49 CFR PART 397 | TRUCK/TRACTOR |
| d. TRUCK TRAILER | b. TRAILER |

**SECTION II - MECHANICAL INSPECTION**

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>TYPE OF VEHICLE(S)</th>
<th>TRACTOR, TRAILER, DRUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUCK TRAILER, DRUM</td>
<td></td>
</tr>
<tr>
<td>11. VEHICLE NUMBER(S)</td>
<td>VIBR 7906/10L 65/0030</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. PART INSPECTED (X as applicable)</th>
<th>13. INSPECTION RESULTS (X one)</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Original)</td>
<td>(Destination)</td>
<td>(Original)</td>
</tr>
<tr>
<td>SAT</td>
<td>UNSAT</td>
<td>SAT</td>
</tr>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>k. EXHAUST SYSTEM</td>
<td></td>
</tr>
<tr>
<td>b. HORN OPERATIVE</td>
<td>l. BRAKE SYSTEM*</td>
<td></td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td>m. SUSPENSION</td>
<td></td>
</tr>
<tr>
<td>d. WINDSHIELD WIPERS</td>
<td>n. COUPLING DEVICES</td>
<td></td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td>o. CARGO SPACE</td>
<td></td>
</tr>
<tr>
<td>f. WARNING EQUIPMENT</td>
<td>p. LANDING GEAR*</td>
<td></td>
</tr>
<tr>
<td>g. FIRE EXTINGUISHER*</td>
<td>q. TIRES, WHEELS, RIMS</td>
<td></td>
</tr>
<tr>
<td>h. ELECTRICAL WIRING</td>
<td>r. TAILGATE DOORS*</td>
<td></td>
</tr>
<tr>
<td>i. LIGHTS AND REFLECTORS</td>
<td>s. TARPUPS*</td>
<td></td>
</tr>
<tr>
<td>j. FUEL SYSTEM*</td>
<td>t. OTHER (Specify)</td>
<td></td>
</tr>
</tbody>
</table>

13. INSPECTION RESULTS (X one) ACCEPTED | REJECTED

(If rejected give reason under "Remarks", Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED \[\] REJECTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin) 26. DRIVER(S) SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination) 27. DRIVER(S) SIGNATURE (Destination)

**SECTION III - POST LOADING INSPECTION**

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>a. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR</td>
<td></td>
</tr>
<tr>
<td>b. LOAD PROPERLY SECURED TO PREVENT MOVEMENT</td>
<td></td>
</tr>
<tr>
<td>c. SEALS APPLIED TO CLOSED VEHICLE; TARPAPULN APPLIED ON OPEN EQUIPMENT</td>
<td></td>
</tr>
<tr>
<td>d. PROPER PLACARDS APPLIED</td>
<td></td>
</tr>
<tr>
<td>e. SHIPPING PAPERS/DM SCALE FORM 833 FOR GOVERNMENT VEHICLE SHIPMENTS</td>
<td></td>
</tr>
<tr>
<td>f. COPY OF DD FORM 626 FOR DRIVER</td>
<td></td>
</tr>
<tr>
<td>g. SHIPPED UNDER DOT SPECIAL PERMIT 868</td>
<td></td>
</tr>
<tr>
<td>h. INSPECTOR SIGNATURE (Origin) 25. DRIVER(S) SIGNATURE (Origin)</td>
<td></td>
</tr>
<tr>
<td>i. INSPECTOR SIGNATURE (Destination)</td>
<td>28. DRIVER(S) SIGNATURE (Destination)</td>
</tr>
</tbody>
</table>
AUSTIN POWDER PACKING LIST

SHIPPMENT DATE 12 MAR 2013

B/L# 2855 TRL 68#0020

M-6

IND82D-070113  25 PTS
IND82E-070114  5 PTS
IND86M-070673  7 PTS
IND82K-070178  1 PT
IND82K-070173  1 PT
IND81B-070013  1 PT
IND84C-070331  2 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
## PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
Technical Information Phone No.: 318 382 8700  
For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>PROPELLANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>FLAMMABILITY</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>HAZARDOUS MATERIALS IDENTIFICATION SYSTEM</td>
</tr>
<tr>
<td>HAZARD INDEX</td>
</tr>
<tr>
<td>4 = SEVERE HAZARD</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
</tr>
<tr>
<td>PERSONAL PROTECTION INDEX</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>I</td>
</tr>
<tr>
<td>J</td>
</tr>
<tr>
<td>K</td>
</tr>
<tr>
<td>L</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION [B]

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explo systems.com
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81BY70013  
**Date of analysis:**

**Other Information:**
- **M6 Propellant**

## Sample Data
- **Solvent:** ACN  
  - **Sample Data #1**  
    - **Conc.** 0.50 g  
    - **ml** 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.645</td>
<td>25.8</td>
<td></td>
<td>276.6</td>
<td>1.072</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.455</td>
<td>935.1</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.27</td>
<td>617.1</td>
<td></td>
<td>21259</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.669</td>
<td>1017.5</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.239</td>
<td>1621.4</td>
<td></td>
<td>113</td>
<td>0.007</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.527</td>
<td>2921.7</td>
<td></td>
<td>196.9</td>
<td>0.007</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.049</td>
<td>5600.8</td>
<td></td>
<td>332.6</td>
<td>0.024</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.932</td>
<td>1374.7</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  

**Comment:**
- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst**  
KISHA DICKERSON

**Avg. Tot. Stabilizers**  
1.11 %

** Analyst Signature**  
Stable  
YES  
Unstable

**Comments**  
CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070113

**D533 / M6 propellant**

**Date of analysis:**

**Sample Data**

- **Solvent**
  - #1
  - 100 ml ACN

**Other Information**

- M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td>328.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
<td>16</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
<td>21965</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.018</td>
<td>1103.9</td>
<td>0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
<td>66.8</td>
</tr>
<tr>
<td>2NDA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
<td>143.1</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.956</td>
<td>6219.8</td>
<td>790.9</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
<td>0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.336

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON

**Avg. Tot. Stabilizers:** 0.34 %

**Analyst Signature**

**Stable:** YES

**Unstable**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

Form #158

Original Print Date: 07/19/2010

EXP_001240
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070114  
**Date of analysis:** Date: 22 NOV 2011  
**D533 / M6 propellant**  
**M6 Propellant**  
**Sample Data**  
**Solvent**  
**#1**  
**0.50 g**  
**100 ml**  
**ACN**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area %</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.753</td>
<td>205.4</td>
<td>523.3</td>
<td>0.303</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.383</td>
<td>927.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.127</td>
<td>481.8</td>
<td>21922</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.38</td>
<td>1001.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.893</td>
<td>1609.3</td>
<td>58.6</td>
<td>0.004</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.053</td>
<td>2886.9</td>
<td>118</td>
<td>0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.586</td>
<td>5621.7</td>
<td>791.2</td>
<td>0.056</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.383</td>
<td>1361.9</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  
0.367

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.37%

**Analyst Signature**  
Stable YES Unstable

**Comments**  
CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070173  
**D533 / M6 propellant**  
**Date of analysis:** Date: 21 Apr 2011  
**Other Information**  
**M6 Propellant**  

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4'-DNOPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4'-DNOPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNOPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4DNPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 3.033

**0.30% or more is Stability Code A**  
**0.20% - 0.29% is Stability Code C**  
**Less than 0.20% is Stability Code D**

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 3.03 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  

EXP_001242
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 21 SEP 2010

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.168</td>
<td>128.5</td>
<td>113.7</td>
<td>0.088</td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.033</td>
<td>432</td>
<td>217.6</td>
<td>0.050</td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.206</td>
<td>1480.6</td>
<td>820.7</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>10.409</td>
<td>485.4</td>
<td>222.7</td>
<td>0.046</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.495

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kle  
**Avg. Tot. Stabilizers:** 0.50%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGROY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND86M070673  
D533 / M6 propellant

Date of analysis:  
Date: 7 FEB 2012

Other Information
M6 Propellant

Sample Data
Sample #1  
0.50 g  
100 ml  
ACN

Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>50.1</td>
<td>452.6</td>
<td>0.903</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.336</td>
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<td>2,2' DNDPA</td>
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<td>5.03</td>
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<td>2,4' DNDPA</td>
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<td>7.182</td>
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</table>

Avg. % Stabilizer for Lot: 0.965

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

Analyst: TAKISHA DICKERSON  
Avg. Tot. Stabilizers: 0.97%

Analyst Signature  
Stable: YES Unstable

Comments: CATEGORY: A

Lab. Supervisor Signature  
Actions to be Taken

Form #158

Original Print Date: 07/10/2010

EXP_001244
## STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to the usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service line of performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, It this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept it for himself and his assigns.

### Shipper Information
- **Shipper:** Explo Systems, Inc.
  - **Address:** 1606 Java Road
  - **City:** Minden, LA 71055

### Consignee Information
- **Consignment:** 3
- **Freight Charges:** Collect
- **Prepaid:** NN
- **Location No.:** 29220

### Shipment Details
- **Delivery Address:** Austin Powder Company
  - **Route:** Eastr Top Plant
  - **City:** East Camden Plant
  - **State:**
  - **State Lic.:**
  - **Customer No.:**

### Shipment Description
- **Description:** UN0161, Powder, Smokeless, 1.3C, PG II
- **Class:** Explosives

### Shipment Details
- **Receipt Date:** MAR 14 2013
- **Receipt Number:** 17413
- **Truck No.:**
- **Trailer No.:**
- **Mileage:**
- **Total Packages:**
- **Gross Weight:**
- **Net Explosive Weight:**

### Certification
- **Signature:**
- **Invoice No.:**

---

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

---

**DOT Hazardous Material Handling Number**
- **Local Federal Explosives License No.:** 5-LA-119-20-1A-00057
  - **Per:**

---

**Shipper's Signature:**

---

**Authorized Receiver:**
AUSTIN POWDER PACKING LIST

13
SHIPMENT DATE 3-14-13

B/L# 2858 TRL 18477

M-6

IND84G-070326  4 PTS
IND81D-070020  1 PTS
IND82L-070178  5 PTS
IND86M-070673  6 PTS
IND84C-070331  6 PTS
IND81E-070022  15 PTS
IND81D-070019  1 PT
IND82E-070114  1 PT
IND82A-070101  1 PT
IND83F-070274  1 PT
IND85X-070598  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

[Signature]

LIONEL KOONS

EXPO SYSTEMS INC
**MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)**

(Read instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER: 2858

### SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRUK</td>
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</tbody>
</table>

2. CARRIER/GOVERNMENT ORGANIZATION: RRUK

3. DATETIME OF INSPECTION: 3/13/13

4. LOCATION OF INSPECTION: EPLD SYSTEMS L.L.C.

5. OPERATOR(S) NAME(S): BRIAN BRAN

6. OPERATOR(S) LICENSE NUMBER(S): 8123328 00

7. MEDICAL EXAMINER'S CERTIFICATE:

8. (X if satisfactory at origin)
   - MILITARY HAZMAT ENDORSEMENT: YES
   - ERG OR EQUIVALENT COMMERCIAL: NO
   - DRIVER'S VEHICLE INSPECTION REPORT:
     - TRUCK/TRACTOR: NO
     - TRAILER: NO
   - CSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT:
     - YES
     - NO

### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

9. TYPE OF VEHICLE(S): TRACTOR/TRACTOR/DRUM

10. VEHICLE NUMBER(S):
    - 6172
    - 6477

### PART INSPECTED

<table>
<thead>
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<th>ORIGIN</th>
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</tr>
</tbody>
</table>

11. INSPECTION RESULTS
    - (X one) ACCEPTED
    - REJECTED

12. SATELLITE MOTOR SURVEILLANCE SYSTEM:
    - (X one)
    - ACCEPTED
    - REJECTED

13. REMARKS

14. INSPECTOR SIGNATURE (Origin)  

15. INSPECTOR SIGNATURE (Destination)

### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

16. LOADED IAW APPLICABLE SEGREGATION/INCOMPATIBILITY TABLE OF 49 CFR

17. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

18. SEALS APPLIED TO CLOSED VEHICLE; TARPALIN APPLIED ON OPEN EQUIPMENT

19. PROPER PLACARDS APPLIED

20. SHIPPING PAPERS/DD FORM 858 FOR GOVERNMENT VEHICLE SHIPMENTS

21. COPY OF DD FORM 858 FOR DRIVER

22. DRIVER(S) SIGNATURE (Origin)

23. DRIVER(S) SIGNATURE (Destination)
# MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

## SECTION I - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
Technical Information Phone No.: 318 382 8700  
For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
</table>
| Dibutyl Phthalate           | 84-74-2  | 3.00  | OSHA PEL 5 mg/m³  
ACGIH TLV 5 mg/m³  
EPA RQ 10 lbs  
DOT RQ 10 lbs |
| Diphenylamine               | 122-39-4 | 1.00  | OSHA PEL 10 mg/m³  
ACGIH TLV 10 mg/m³  
EPA RQ (none defined)  
DOT RQ (none defined) |
| Potassium Sulfate           | 7778-80-5| 2.00  | OSHA PEL none published  
ACGIH TLV none published  
EPA RQ (none defined)  
DOT RQ (none defined) |
| Nitrocellulose (flammable solid) | --      | 87.00 | OSHA PEL none published  
ACGIH TLV none published  
EPA RQ (none defined)  
DOT RQ (none defined) |
| Dinitrotoluene               | 25321-14-6| 10.00 | OSHA PEL 10 mg/m³  
ACGIH TLV 10 mg/m³  
EPA RQ 10 lbs  
DOT RQ 10 lbs |
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

<table>
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<tbody>
<tr>
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<tr>
<td>3 = SERIOUS HAZARD</td>
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<tr>
<td>2 = MODERATE HAZARD</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
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</table>

<table>
<thead>
<tr>
<th>PERSONAL PROTECTION INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately. INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-extinguishing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 7 FEB 2012

<table>
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<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tr>
<td>#1</td>
<td>0.50 g</td>
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<td></td>
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<td></td>
<td>ACN</td>
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### Standards (ERG-006)

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<th>Conc. ppm</th>
<th>Ret Time</th>
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<tbody>
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<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>50.1</td>
<td>452.6</td>
<td>0.903</td>
</tr>
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<td>893.6</td>
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<td>22299</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.182</td>
<td>1225.5</td>
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<td>N-NitrosoDPA</td>
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<td>11.979</td>
<td>1363.1</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Results

**Avg. % Stabilizer for Lot:** 0.965

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.97%

**Analyst Signature:**  
**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**  
**Actions to be Taken:**
**HPLC PROPELLANT STABILITY REPORT**

Lot Number: IND85K070598  
D533 / M6 propellant

Date of analysis:  
Date: 25 AUG 2010

Other Information  
M6 Propellant

Sample Data  
#1  
0.5000 g  
100 ml  
ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
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<tr>
<td>2,2’ DNDPA</td>
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<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot  
1.005

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

Analyst  
Kisha Dickerson

Analyst Signature

Avg. Tot. Stabilizers  
1.00 %

Comments  
CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken

EXP_001253
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 18 JULY 2012

## Sample Data

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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
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## Standards (ERG-006)

<table>
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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
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<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.365</td>
<td>949.7</td>
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<table>
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<tr>
<td>49.1</td>
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<tr>
<td>84.6</td>
<td>0.003</td>
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<tr>
<td>789.2</td>
<td>0.052</td>
</tr>
<tr>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Average % Stabilizer for Lot

0.430

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers:** 0.43 %

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:** Date: 21 SEP 2010

### Other Information

- Sample Data
  - #1 0.5000 g  
  - 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>2.188</td>
<td>128.5</td>
<td>113.7</td>
<td>0.088</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.033</td>
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<td>217.6</td>
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<td>2,2'-DNDPA</td>
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<td>2,4'-DNDA</td>
<td>50.0</td>
<td>10.409</td>
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<td>4NDPA</td>
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<td>60.0</td>
<td>13.489</td>
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<td>0.051</td>
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<tr>
<td>DPA</td>
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<td>14.97</td>
<td>2121.4</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>16.167</td>
<td>463.9</td>
<td>299.3</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

0.495

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.50 %  
**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**Category:** A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

EXP_001255
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**Date of analysis:** D533 / M6 propellant  
**Date:** 27 JULY 2011

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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</thead>
<tbody>
<tr>
<td>#1 0.50 g</td>
<td>100 ml</td>
</tr>
</tbody>
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## Standards (ERG-006)

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<thead>
<tr>
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<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
<td>622.1</td>
<td>0.552</td>
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<td>3.477</td>
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<td>0.000</td>
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<td>2,2’ DNPD</td>
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<td>0.000</td>
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<td>4NDPA</td>
<td>50.0</td>
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<td>1634.2</td>
<td>48.5</td>
<td>0.003</td>
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<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
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<td>0.000</td>
</tr>
</tbody>
</table>

## Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers:** 0.59%

**Comments:**

- CATEGORY: A
- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst Signature:**

**Stable** YES Unstable

**Lab. Supervisor Signature:**

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

Lot Number: IND82A070101  |  D533 / M6 propellant
---|---
Date of analysis: | Date: 28 June 2012

**Other Information**

Sample Data | Solvent
---|---
#1 | 0.50 g 100 ml ACN

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.874</td>
<td>19.1</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.347</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.046</td>
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<td>50.0</td>
<td>6.347</td>
<td>22</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>7.273</td>
<td>1080.1</td>
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</tr>
<tr>
<td>2NDPA</td>
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<td>8.74</td>
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<td>3122.3</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.353</td>
<td>6047.1</td>
<td>81.2 0.010</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot**

| **0.693**

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst** Takishe Dickerson  |  **Avg. Tot. Stabilizers** 0.69 %

**Analyst Signature** | Stable YES Unstable

**Comments** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070114  
**D533 / M6 propellant**

**Date of analysis:**  
**Sample Data:**  
- Sample #: 1  
- Solvent: 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret Intg. ppm</th>
<th>Ret Time</th>
<th>Area 1</th>
<th>Intg. Conc. Area %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0 0.753 205.4</td>
<td>3.383</td>
<td>927.4</td>
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<td>50.0 5.127 481.8</td>
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<td>50.0 8.893 1609.3</td>
<td>10.053</td>
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<td>50.0 11.586 5621.7</td>
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<td>791.2 0.056</td>
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<td>2NDPA</td>
<td>200.0</td>
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<td></td>
<td>0.000</td>
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<tr>
<td>DPA</td>
<td>N-NitrosoDPA</td>
<td></td>
<td></td>
<td></td>
</tr>
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**Avg. % Stabilizer for Lot:** 0.367

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.37%

**Analyst Signature**  
**Stable**  
**Unstable**

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82L070178  D533 / M6 propellant

Date of analysis: Date: 1 FEB 2011

Other Information
M6 Propellant

Sample Data
Solvent

#1  0.5000 g  100 ml  ACN

Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
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<td>ppm</td>
<td>Intg.</td>
<td>Intg.</td>
<td>Conc.</td>
<td>Area</td>
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<td>50.0</td>
<td>9.386</td>
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<td>50.0</td>
<td>10.967</td>
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<td>18.932</td>
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<td>365.7</td>
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Avg. % Stabilizer for Lot 2.446

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst  Mike Kile

Avg. Tot. Stabilizers 2.45%

Analyst Signature
Stable YES Unstable

Comments

Lab. Supervisor Signature

CATEGORY: A

Actions to be Taken

Form #156

Original Print Date: 07/19/2010

019625

EXP_001259
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

**Other Information**  
M6 Propellant

**Sample Data**  
#1  
0.5000 g  
100 ml  
ACN

**Solvent**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
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<td>50.0</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.237

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.24 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 10 Feb 2012

## Other Information
- **Sample Data**
  - Solvent: #1  
  - Quantity: 0.50 g  
  - Volume: 100 ml  
  - Solvent: ACN

## Standards (ERG-008)

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<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Intg. Area 1</th>
<th>Conc. Intg. Area</th>
<th>%</th>
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<td>4,4' DNCPA</td>
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**Avg. % Stabilizer for Lot:** 0.797

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kiley  
**Avg. Tot. Stabilizers:** 0.80%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A  
**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81D070019  D533 / M6 propellant
Date of analysis:  Date: 29 MAY 2012

Sample Data
#1  0.50 g  100 ml  ACN

M6 Propellant

### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret.</th>
<th>Intg.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
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</tr>
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<td>2,4’ DNDPA</td>
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<td>50.0</td>
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<table>
<thead>
<tr>
<th>Sample #</th>
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<tbody>
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</tr>
<tr>
<td>Conc.</td>
</tr>
<tr>
<td>Area %</td>
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Avg. % Stabilizer for Lot 0.309

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson  Avg. Tot. Stabilizers 0.31 %

Analyst Signature

Stable  YES  Unstable

Comments

CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service done hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Shipper's No. 2857

At

By

Freight Charges: Collect Prepaid

Location No. 2488

(Mail or Street Address of Consignee — For purposes of notification only)

Consigned to

Consignment No.

Fed Lic. 576801055-20-52 000006

Exp. Date 5/1/15

Destination 71311 Minden, LA

State Lic. 576801055-20-52 000006

Exp. Date 5/1/15

County Rapides Parish

Route

Charge Account of

Customer P.O. No.

Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EXEMPTION</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of PROS</td>
<td>No. of UNITS</td>
<td>AND HAZARD CLASS</td>
<td>No. of PROS</td>
<td>No. of UNITS</td>
<td>112</td>
<td>EXPLOSIVES 1.3</td>
</tr>
<tr>
<td>201</td>
<td>0</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Inv. No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT

IN THE USA CALL 800-424-9350 IN CANADA (ERP #2-0004) 800-561-3626 ELSEWHERE CALL (703) 527-9387

Received By

Q CONSIGNEE Q CARRIER

Date 3/14/13

By

AUTHORIZED RECEIVER

019629
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 2/13/13

B/L# 2857 TRL 18483

M-6

IND84G-070326 7 PTS
IND81D-070020 3 PTS
IND82L-070178 8 PTS
IND86M-070673 5 PTS
IND84C-070331 6 PTS
IND81E-070022 8 PTS
IND88E-070963 1 PT
IND81D-070019 1 PT
IND82E-070114 1 PT
IND81B-070013 1 PT
IND82A-070101 1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOOKS

EXPLO SYSTEMS INC
## MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

(Read instructions before completing this form.)

### SECTION 1 - DOCUMENTATION

<table>
<thead>
<tr>
<th>Origin (b)</th>
<th>Destination (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER</td>
<td>2A57</td>
</tr>
</tbody>
</table>

### SECTION 2 - CARRIER/GOVERNMENT ORGANIZATION

<table>
<thead>
<tr>
<th>2. CARRIER/GOVERNMENT ORGANIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>RevK</td>
</tr>
</tbody>
</table>

### SECTION 3 - DATE/TIME OF INSPECTION

<table>
<thead>
<tr>
<th>3. DATE/TIME OF INSPECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/13/13</td>
</tr>
</tbody>
</table>

### SECTION 4 - LOCATION OF INSPECTION

<table>
<thead>
<tr>
<th>4. LOCATION OF INSPECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explo Systems Inc.</td>
</tr>
</tbody>
</table>

### SECTION 5 - OPERATOR(S) NAME(S)

<table>
<thead>
<tr>
<th>5. OPERATOR(S) NAME(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beigle, Brian</td>
</tr>
</tbody>
</table>

### SECTION 6 - OPERATOR(S) LICENSE NUMBER(S)

<table>
<thead>
<tr>
<th>6. OPERATOR(S) LICENSE NUMBER(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$123-125-24A</td>
</tr>
</tbody>
</table>

### SECTION 7 - MEDICAL EXAMINER’S CERTIFICATE

<table>
<thead>
<tr>
<th>7. MEDICAL EXAMINER’S CERTIFICATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/17/14</td>
</tr>
</tbody>
</table>

### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>10. TYPE OF VEHICLE(S)</th>
<th>11. VEHICLE NUMBER(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRACTOR</td>
<td>76172-1770-18453</td>
</tr>
</tbody>
</table>

### SECTION 12 - PARTS INSPECTED

<table>
<thead>
<tr>
<th>Part</th>
<th>Origin (1)</th>
<th>Destination (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. HORN OPERATIVE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. WINDSHIELD/WIPERS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. WARNING EQUIPMENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. FIRE EXTINGUISHER*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. ELECTRICAL WIRING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. LIGHTS AND REFLECTORS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. FUEL SYSTEM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 13 - INSPECTION RESULTS

- ACCEPTED
- REJECTED

(If rejected give reason under “Remarks”. Equipment will be approved if deficiencies are corrected prior to loading.)

### SECTION 14 - SATCHEL MOTOR SURVEILLANCE SYSTEM

<table>
<thead>
<tr>
<th>14. SATCHEL MOTOR SURVEILLANCE SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>(X one) ACCEPTED</td>
</tr>
<tr>
<td>REJECTED</td>
</tr>
</tbody>
</table>

### SECTION 15 - REMARKS

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

| 18. LOADED IAW APPLICABLE SEGREGATION/INCOMPATIBILITY TABLE OF 49 CFR |
| 19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT |
| 20. SEALS APPLIED TO CLOSED VEHICLE; TARPALIN APPLIED ON OPEN EQUIPMENT |
| 21. PROPER PLACARDS APPLIED |
| 22. SHIPPING PAPERS/DD FORM 886 FOR GOVERNMENT VEHICLE SHIPMENTS |
| 23. COPY OF DD FORM 285 FOR DRIVER |
| 24. SHIPPED UNDER DOT SPECIAL PERMIT 868 |

### SECTION 16 - INSPECTOR SIGNATURE (Origin)

<table>
<thead>
<tr>
<th>Inspector Signature (Origin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Signature]</td>
</tr>
</tbody>
</table>

### SECTION 17 - INSPECTOR SIGNATURE (Destination)

<table>
<thead>
<tr>
<th>Inspector Signature (Destination)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Signature]</td>
</tr>
</tbody>
</table>

### SECTION 18 - DRIVER(S) SIGNATURE (Origin)

<table>
<thead>
<tr>
<th>Driver(S) Signature (Origin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Signature]</td>
</tr>
</tbody>
</table>

### SECTION 19 - DRIVER(S) SIGNATURE (Destination)

<table>
<thead>
<tr>
<th>Driver(S) Signature (Destination)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Signature]</td>
</tr>
</tbody>
</table>
# MATERIAL SAFETY DATA SHEET

## PROPELLANT (Wetted)

### SECTION I - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
**Technical Information Phone No.:** 318 382 8700  
For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>SEVERE HAZARD</td>
</tr>
<tr>
<td>3</td>
<td>MODERATE HAZARD</td>
</tr>
<tr>
<td>2</td>
<td>SERIOUS HAZARD</td>
</tr>
<tr>
<td>1</td>
<td>SLIGHT HAZARD</td>
</tr>
<tr>
<td>0</td>
<td>MINIMAL HAZARD</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION INDEX

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid…Keep away from heat, sparks, open flame…Keep containers closed…use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight. Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted) Hazard Class: 1.3C UN No. UN0161 Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER

The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR

This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
# HPLC PROPELLANT STABILITY REPORT

## Lot Number:
- IND88E070963

## Date of analysis:
- 25 AUG 2010

## D533 / M6 propellant

### Standards (ERG-005)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>0.935</td>
<td></td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
<td>1809.7</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4886.9</td>
<td>0.050</td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1206.7</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

### Sample #

- 0.985

**Avg. % Stabilizer for Lot:** 0.985

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

### Analyst
- Kisha Dickerson

### Analyst Signature
- Stable: YES

### Lab. Supervisor Signature
- Comments: CATEGORY: A

### Actions to be Taken

---

Form #158

Original Print Date: 07/19/2010

019636

EXP_001270
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 7 FEB 2012

**Other Information**  
**M6 Propellant**

## Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Conc. (ppm)</th>
<th>Ret Time (min)</th>
<th>Intg. Area</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50</td>
<td>100 ml</td>
<td>ACN</td>
<td></td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (min)</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>50.1</td>
<td>452.6 0.903</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.336</td>
<td>893.6</td>
<td>0 0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.03</td>
<td>726.8</td>
<td>22299 0.000</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.182</td>
<td>1225.5</td>
<td>0 0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.642</td>
<td>1532.1</td>
<td>67.5 0.004</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.759</td>
<td>2784.7</td>
<td>120.3 0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.235</td>
<td>5480.9</td>
<td>727.3 0.053</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.979</td>
<td>1363.1</td>
<td>0 0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  
0.965

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON  
**Avg. Tot. Stabilizers**  
0.97 %

**Analyst Signature**  
Stable  
**Unstable**

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:** Date: 21 SEP 2010

### Other Information
- **M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.188</td>
<td>128.5</td>
<td>113.7</td>
<td>0.088</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.033</td>
<td>432</td>
<td>217.6</td>
<td>0.050</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.206</td>
<td>1480.6</td>
<td>820.7</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>10.409</td>
<td>485.4</td>
<td>222.7</td>
<td>0.046</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.024</td>
<td>1113.3</td>
<td>522</td>
<td>0.047</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>13.489</td>
<td>784</td>
<td>396.3</td>
<td>0.051</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.97</td>
<td>2121.4</td>
<td>1130.5</td>
<td>0.213</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>16.167</td>
<td>463.9</td>
<td>299.3</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: **0.495**

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- Mike Kile

### Analyst Signature

### Avg. Tot. Stabilizers
- **0.50 %**

### Comments
- **CATEGORY:** A

### Actions to be Taken

---

Form #158  
Original Print Date: 07/19/2010

EXP_001272
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND84G070326  D533 / M6 propellant

### Date of analysis:
- Date: 18 JULY 2012

### Other Information:
- Sample Data: 
  - #1: 0.50 g  ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td></td>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td>4,4' DNPD</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
<td></td>
<td>498.4</td>
<td>0.372</td>
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<tr>
<td>2,4-DNPD</td>
<td>50.0</td>
<td>3.365</td>
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<tr>
<td>2,2' DNPD</td>
<td>50.0</td>
<td>5.091</td>
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<td>24044</td>
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<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot: 0.430

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst
- **Takisha Dickerson**

## Analyst Signature
- [Signature]

## Avg. Tot. Stabilizers: 0.43 %

## Analyst Signature
- [Signature]

## Comments
- **CATEGORY:** A

## Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82A070101  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 28 June 2012

**Other Information**  
M6 Propellant

**Sample Data**  
Solvent: 
- **Sample #1**  
  - **0.50 g**  
  - **100 ml**  
  - **ACN**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNCEPA</td>
<td>50.0</td>
<td>0.874</td>
<td>19.1</td>
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<td>45.1</td>
<td>0.003</td>
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**Avg. % Stabilizer for Lot:** 0.693

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.69%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070114  
**Date of analysis:** 22 NOV 2011  
**Other Information:** M6 Propellant  
**Sample Data:**  
- **Solvent:** #1, 0.50 g, 100 ml, ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td>Area</td>
</tr>
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<td>4,4'-DNDA</td>
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<td>0.753</td>
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<td>0.303</td>
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</tr>
<tr>
<td>2,4-DNDPA</td>
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<td>927.4</td>
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<td>0.000</td>
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<td></td>
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<td>0.000</td>
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<td></td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.893</td>
<td>1609.3</td>
<td>58.6</td>
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<td></td>
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<td>DPA</td>
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<td>11.586</td>
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<td>0.056</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.383</td>
<td>1361.9</td>
<td>0</td>
<td>0.000</td>
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<td></td>
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</table>

**Avg. % Stabilizer for Lot:** 0.367

- **0.30% or more is Stability Code A**
- **0.20% - 0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.37 %

**Analyst Signature**

**Comments:**

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82L070178  
**Date of analysis:**  
**Other Information: M6 Propellant**  
**Solvent:** ACN  
**Sample Data #1:** 0.5000 g  
**Volume:** 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>1943.1</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.987</td>
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<td>97.6</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
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<td>11.73</td>
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<td>75.0</td>
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</table>

### Avg. % Stabilizer for Lot

![2.446](2.446)

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Mike Kile  
**Avg. Tot. Stabilizers:** 2.45 %

**Analyst Signature:**  
**Comments:**

**Lab. Supervisor Signature:**  
**CATEGORY:** A  
**Actions to be Taken:**

---

Form #158  
Original Print Date: 07/19/2010

019642  
EXP_001276
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81BY70013  
**Date of analysis:** 29 AUGUST 2011  
**Sample Data #1**  
**Solvent:** ACN  

<table>
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<tr>
<th>Stabilizer</th>
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<th>Retention Time</th>
<th>Intensity</th>
<th>Concentration Area</th>
<th>%</th>
<th>Intensity</th>
<th>Concentration Area</th>
<th>%</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
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<td>0.645</td>
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<td>0.000</td>
<td>0.000</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.27</td>
<td>617.1</td>
<td>21259</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.689</td>
<td>1017.5</td>
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<td>0.000</td>
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<tr>
<td>4NDPA</td>
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<td>9.239</td>
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<td>1374.7</td>
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<td></td>
<td></td>
<td></td>
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**Avg. % Stabilizer for Lot:** 1.110

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** KISHA DICKERSON  
**Avg. Tot. Stabilizers:** 1.11 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**

**Date of analysis:**
- **Sample Data**
  - #1  
  - 0.50 g  
  - 100 ml  
  - ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
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<tbody>
<tr>
<td>4,4'-DNDA</td>
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<td>0.86</td>
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<td>50.0</td>
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<td>2,2'-DNDA</td>
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<td>50.0</td>
<td>8.917</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.112</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
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<td>75.0</td>
<td>12.414</td>
<td>1351.4</td>
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**Avg. % Stabilizer for Lot**  
0.309

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst
- **Takisha Dickerson**

**Avg. Tot. Stabilizers**  
0.31 %

**Analyst Signature**

**Stable**  
**YES**  
**Unstable**

**Comments**

**CATEGORY:**  
A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 AUG 2010

**Other Information**

<table>
<thead>
<tr>
<th>M6 Propellant</th>
<th>Sample Data</th>
<th>Solvent</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>#1</td>
<td>0.5000 g</td>
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</tbody>
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## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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<td>2.174</td>
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<td>11.899</td>
<td>750.7</td>
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<td>14.875</td>
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</table>

**Avg. % Stabilizer for Lot:** 2.237

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

- **Kisha Dickerson**

## Analyst Signature

- **Stable: YES**  
- **Unstable: **

## Comments

- **CATEGORY:** A

## Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:** Date: 10 Feb 2012

**Other Information**  
Sample Data | Solvent  
---|---  
#1 | 100 ml ACN

**M6 Propellant Standards (ERG-006)**

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Intg. Conc.</th>
<th>Sample #</th>
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<td>Time</td>
<td>Area 1</td>
<td>Area</td>
<td>%</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.292</td>
<td>918.2</td>
<td>0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.936</td>
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<td>2,4' DNDPA</td>
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<td>1003.3</td>
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</tr>
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<td>50.0</td>
<td>8.309</td>
<td>1616.5</td>
<td>50</td>
</tr>
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<td>2NDPA</td>
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<td>1264.1</td>
<td>355.2</td>
</tr>
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</table>

Avg. % Stabilizer for Lot: **0.797**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** | Mike Kile  
**Avg. Tot. Stabilizers** | **0.80 %**  
**Analyst Signature** | **Stable** | **YES** | **Unstable**  
**Lab. Supervisor Signature** | **Comments** | **CATEGORY:** | **A**  
**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service line performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Shipper: Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055

By:  

Freight Charges: Collect  
Prepaid  

Location No.: 241/2420

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<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Weight</th>
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</thead>
<tbody>
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<td>250.00</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>420.00</td>
<td>35.20</td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the acceptable regulations of the Department of Transportation.

Signature:  

For chemical emergency, spill, leak, fire, explosion or accident call Chemtrec - Day or Night in the USA call 800-424-9300 in Canada (ERP # 0004) 800-851-3336 elsewhere call 703-297-8888.

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have acknowledged the goods in apparent good order and condition.

Received by:  

Date: 3/13/13

Q CONSIGNEE  
Q CARRIER

By:  

AUTHORIZED RECEIVER

019647  
EXP_001281
AUSTIN POWDER PACKING LIST

SHIPMENT DATE

B/L# 2855 TRL 1810031

M-6

IND82D-070113  4 PTS
IND86M-070673  14 PTS
IND82K-070178  2 PT
IND82K-070173  1 PT
IND818-070013  2 PT
IND84C-070331  6 PTS
IND85K-070598  3 PTS
IND83F-070274  3 PTS
IND84G-070326  4 PTS
IND82A-070101  1 PT
IND81E-070022  1 PT
IND81D-070020  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

(Read Instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

## SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW K</td>
<td></td>
</tr>
</tbody>
</table>

## 1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

2654

## 2. CARRIER/GOVERNMENT ORGANIZATION

3/13/13

## 3. DATE/TIME OF INSPECTION

EVDIO SYSTEMS INC

## 4. LOCATION OF INSPECTION

P RIO 160.4/14,000FT

## 5. OPERATOR(S) NAME(S)

P w 30. 425-41-000-0 P

## 6. OPERATOR(S) LICENSE NUMBER(S)

2/25/15

## 7. MEDICAL EXAMINER'S CERTIFICATE

**SECTION II - MECHANICAL INSPECTION**

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all loading loaded equipment.

## 10. TYPE OF VEHICLE(S)

TRUCK/TRACTER/ DORM

## 11. VEHICLE NUMBERS

1/14/031

## 12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>SAT</th>
<th>UNSAT</th>
<th>SAT</th>
<th>UNSAT</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 13. INSPECTION RESULTS (X one)

- ACCEPTED
- REJECTED

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

## 14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one)

- ACCEPTED
- REJECTED

## 15. REMARKS

**SECTION III - POST LOADING INSPECTION**

This section applies to Commercial and Government/Military vehicles. All items shall be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

## 18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

## 19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

## 20. SEALS APPLIED TO CLOSED VEHICLE; TARPALIN APPLIED ON OPEN EQUIPMENT

## 21. PROPER placARDS APPLIED

## 22. SHIPPING PAPERS/SD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

## 23. COPY OF DD FORM 626 FOR DRIVER

## 24. SHIPPED UNDER DOT SPECIAL PERMIT S88

## 25. INSPECTOR SIGNATURE (Origin)

## 26. DRIVER(S) SIGNATURE (Origin)

## 27. INSPECTOR SIGNATURE (Destination)

## 28. DRIVER(S) SIGNATURE (Destination)
**SECTIOIN 1 - PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
Technical Information Phone No.: 318 382 8700  
For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL ACGIH TLV EPA RQ (if defined) DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³ ACGIH TLV 5 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>--</td>
<td>87.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>[B]</td>
</tr>
</tbody>
</table>

HAZARD INDEX

- 4 = SEVERE HAZARD
- 3 = SERIOUS HAZARD
- 2 = MODERATE HAZARD
- 1 = SLIGHT HAZARD
- 0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-extinguishing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explo systems.com
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**Date of analysis:** Date: 7 FEB 2012

**Other Information**  
M6 Propellant  
Sample Data  
Sample #1  
0.50 g  
100 ml  
ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot  

0.965  

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers** 0.97 %  
**Analyst Signature** Stable YES Unstable  
**Comments** CATEGORY: A

**Lab. Supervisor Signature**  

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND85K070598  
**D533 / M6 propellant**  
**Date of analysis:** Date: 25 Aug 2010  
**Other Information**  
M6 Propellant  
**Sample Data**  
<table>
<thead>
<tr>
<th>Sample</th>
<th>Solvent</th>
</tr>
</thead>
</table>
| #1     | 0.5000 g  
|        | 100 ml   |
|        | ACN      |

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>1423.9</td>
<td>0.972</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’-DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14670.5</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’-DNDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
<td>1809.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4886.9</td>
<td>403.2</td>
<td>0.033</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Average % Stabilizer for Lot: 1.005

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.00 %

- Stable: YES  
- Unstable: NO

**Comments:**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:** Date: 21 SEP 2010

**Other Information**  
Sample Data:
- #1 0.5000 g  
- 100 ml ACN

**Standards (ERG-005)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>2.188</td>
<td>128.6</td>
<td>113.7</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>5.033</td>
<td>432</td>
<td>217.6</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>7.206</td>
<td>1460.6</td>
<td>820.7</td>
</tr>
<tr>
<td>2,4'-DNDOPA</td>
<td>50.0</td>
<td>10.409</td>
<td>465.4</td>
<td>222.7</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.024</td>
<td>1113.3</td>
<td>522</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>13.489</td>
<td>784</td>
<td>396.3</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.97</td>
<td>2121.4</td>
<td>1130.5</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>16.167</td>
<td>463.9</td>
<td>299.3</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.495

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** Mike Kile  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.50%

**Stable:** YES  
**Unstable:**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A  
**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:** Date: 18 JULY 2012

### Sample Data
- **Sample:** #1  
- **Weight:** 0.50 g
- **Solvent:** 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
<td>498.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.365</td>
<td>949.7</td>
<td>0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.091</td>
<td>2605.4</td>
<td>24044</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.514</td>
<td>1047.9</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
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<td>49.1</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.142</td>
<td>3039.5</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.585</td>
<td>6044.7</td>
<td>789.2</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.4</td>
<td>1395.6</td>
<td>0</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

![0.430](image)

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.43 %

**Analyst Signature**  
![Signature]

**Comments**  
**CATEGORY:** A  
**Actions to be Taken**

**Stable** YES  
**Unstable**

**Lab. Supervisor Signature**  
![Signature]
<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNPA</td>
<td>50.0</td>
<td>0.604</td>
<td>112.8</td>
<td>622.1</td>
<td>0.552</td>
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<td>2,4-DNPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
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<td>0.000</td>
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<td>10.693</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
<td>5630.6</td>
<td>451.4</td>
<td>0.032</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.590

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson

Average Total Stabilizers: 0.59 %

Analyst Signature: Stable

Comments: CATEGORY: A

Actions to be Taken:
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070173  
**D533 / M6 propellant**

**Date of analysis:** Date: 21 Apr 2011

### Other Information
- Sample Data: #1
- Solvent: 0.5000 g  
- 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>4.152</td>
<td>1065.2</td>
<td>3146.2</td>
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<td>2,4’ DNDPA</td>
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<td>1128.6</td>
<td>2896.6</td>
<td>2.566</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>11.075</td>
<td>1789.9</td>
<td>196.4</td>
<td>0.000</td>
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<td></td>
</tr>
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<td>2,4’ DNDPA</td>
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<td>11.744</td>
<td>1596.2</td>
<td>254</td>
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</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.553</td>
<td>2329</td>
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<td>0.000</td>
<td></td>
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<tr>
<td>2NDPA</td>
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<td>14.006</td>
<td>6766.8</td>
<td>251.9</td>
<td>0.004</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>15.197</td>
<td>1817.9</td>
<td>612.3</td>
<td>0.151</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.991</td>
<td>2304.9</td>
<td>398.1</td>
<td>0.000</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

| Avg. % Stabilizer for Lot | 3.033 |

### Analyst
- Kisha Dickerson

### Avg. Tot. Stabilizers
- 3.03%

### Analyst Signature
- Stable: YES  
- Unstable: 

### Comments
- CATEGORY: A

### Lab. Supervisor Signature
- Actions to be Taken

---

Form #158  
**Original Print Date:** 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070113  
**D533 / M6 propellant**

**Date of analysis:** Date: 6 JAN 2012

**Other Information**

**M6 Propellant**

**Sample Data**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample #</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td></td>
<td>328.4</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
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<td>16</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
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<td>21955</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.018</td>
<td>1103.9</td>
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<td>4NDPA</td>
<td>50.0</td>
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<td>1782.5</td>
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<td>66.8</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
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<td>143.1</td>
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<tr>
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<td>10.956</td>
<td>6219.8</td>
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<td>790.9</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
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<td>0</td>
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**Avg. % Stabilizer for Lot:** 0.336

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.34 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82A070101  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 28 June 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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</thead>
<tbody>
<tr>
<td>#1 0.50 g</td>
<td>ACN</td>
</tr>
<tr>
<td>100 ml</td>
<td></td>
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</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
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<tbody>
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<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.874</td>
<td>19.1</td>
<td>129.9</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.347</td>
<td>961.1</td>
<td>0.000</td>
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<tr>
<td>2,2'-DNDPA</td>
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<td>5.046</td>
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<td>23810</td>
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<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>6.347</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>7.273</td>
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<td>2NDPA</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.353</td>
<td>6047.1</td>
<td>776.8</td>
</tr>
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</table>

| % Stabilizer for Lot | 0.693 |

- **Avg. % Stabilizer for Lot**: 0.693
- **0.30% or more is Stability Code A**
- **0.20% - 0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

## Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers**: 0.69%

## Analyst Signature

**Stable**: YES  
**Unstable**: 

## Comments

**CATEGORY**: A

**Actions to be Taken**: 

---

**Form #:158**

019660 EXP_001294
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

**Other Information**
- **Sample Data**
  - **Solvent**
    - #1 0.5000 g  
    - 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
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<td>4.884</td>
<td>715.1</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
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<td>794.8</td>
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<td>2,4'-DNDPA</td>
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<td>12.536</td>
<td>1565</td>
<td>0</td>
<td>0.000</td>
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<tr>
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<td>13.934</td>
<td>4151.3</td>
<td>0</td>
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<td>200.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>451.1</td>
<td>0.063</td>
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</table>

**Avg. % Stabilizer for Lot:** 2.237

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.24 %  
**Analyst Signature**

**Stable:** YES  
**Unstable:** No

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 10 Feb 2012

**Sample Data**  
**Solvent:** ACN  
**Sample #1:** 0.50 g 100 ml

### Standards (ERG-006)

<table>
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<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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<td>53.7</td>
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<td>4NDPA</td>
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<td>1616.5</td>
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<td>0.003</td>
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<td>50.0</td>
<td>9.362</td>
<td>2912</td>
<td>113.3</td>
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<td>666</td>
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<tr>
<td>N-NitrosoDPA</td>
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<td>11.362</td>
<td>1284.1</td>
<td>355.2</td>
<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.797

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Average Total Stabilizers:** 0.80%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service and charge performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof. It this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shippers hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect
Prepaid

Location No.

Shipper’s No.

Shipping Date

Purchase Order No.

Consignee: Austin Brothers
Fed Lic.
State
Exp. Date

Destination: 71210 Franklin Rd
State Lic.
Exp. Date

County: East Cameron
Customer No.

Route

Charge Account of

Customer P.O. No.

Rel. No.

--- Table ---

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EMERGENCY SHIPPER PROCEDURES CODE NO.</th>
<th>EXEMPTION</th>
<th>H M</th>
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<tbody>
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<td>55/16 427</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td>200000003</td>
<td>EXPLOSIVES 1.3</td>
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<tr>
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<td>10413 542</td>
<td>2042</td>
<td>10413 542</td>
<td>2042</td>
<td>10413 542</td>
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<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

--- Resume ---

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

--- Resume ---

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Signature

Invoice No.

--- Resume ---

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-14-13

B/L# 2861 TRL 6840020

M-6

IND84M-070460  4 PTS
IND82E-070114  2 PTS
IND86F-070620  2 PTS
IND88H-070966  1 PT
IND87A-070677  3 PTS
IND81D-070020  1 PT
IND82H-070166  3 PTS
IND88A-070891  1 PT
IND84E-070434  4 PTS
IND83C-Y70236  1 PT
IND91H-071485  2 PTS
IND85E-070521  4 PTS
IND85K-070597  3 PTS
IND80M-070009  1 PT
IND85J-070596  1 PT
IND82E-070115  3 PTS
IND81G-070061  3 PTS
IND87F-Y70043  1 PT
IND88D-070716  1 PT
IND85E-070522  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR. 1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

SECTION 1 - DOCUMENTATION

2. CARRIER/GOVERNMENT ORGANIZATION

3. DATE/TIME OF INSPECTION

4. LOCATION OF INSPECTION

5. OPERATOR(S) NAME(S)

6. OPERATOR(S) LICENSE NUMBER(S)

7. MEDICAL EXAMINER'S CERTIFICATE.*

B. (X if satisfactory at origin)

a. MILITARY HAZMAT ENDORSEMENT

b. VALID LEASE?

c. ROUTE PLAN

d. ERG OR EQUIVALENT COMMERCIAL:

3/14/13

EXP 001299

EXP 001299

EXP 001299

EXP 001299

8. CVSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT*

9. TRUCK/TRACTOR

10. TRAILER

SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment. Items with a (X) shall be checked on empty equipment prior to loading. Items with an (X) and an asterisk shall be checked on all incoming loaded equipment. Items with an (X) and an asterisk shall be checked on empty equipment prior to loading.

10. TYPE OF VEHICLE(S)

TRACTOR TRAILER / DROM

11. VEHICLE NUMBER(S)

12. PART INSPECTED

(X as applicable)

a. SPARE ELECTRICAL FUSES

b. HORN OPERATIVE

c. STEERING SYSTEM

d. WINDSHIELD/WIPERS

e. MIRRORS

f. WARNING EQUIPMENT

g. FIRE EXTINGUISHER

h. ELECTRICAL WIRING

i. LIGHTS AND REFLECTORS

j. FUEL SYSTEM

k. EXHAUST SYSTEM

l. BRAKE SYSTEM

m. SUSPENSION

n. COUPLING DEVICES

o. CARGO SPACE

p. LANDING GEAR

q. TIRES, WHEELS, RIMS

r. TAILGATEDOORS

s. TARPULIN

X

13. INSPECTION RESULTS (X one) ACCEPTED

REJECTED

(If rejected give reason under "REMARKS". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED

REJECTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPULIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 835 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 826 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
EXPLO SYSTEMS, INC.

Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted
Technical Information Phone No.: 318 382 8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
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</thead>
<tbody>
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<td></td>
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<td>Potassium Sulfate</td>
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<tr>
<td>Nitrocellulose (flammable solid)</td>
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OSHA PEL 5 mg/m³  
ACGIH TLV 5 mg/m³  
EPA RQ 10 lbs  
DOT RQ 10 lbs  

Page 1 of 3
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

Hazardous Materials Identification System

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
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<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>A</td>
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<tr>
<td>3 = SERIOUS HAZARD</td>
<td>B</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>C</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td>D</td>
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<tr>
<td>0 = MINIMAL HAZARD</td>
<td>E</td>
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PERSONAL PROTECTION EQUIPMENT:

- A: Respirator
- B: Gloves
- C: Eye Protection
- D: Chemical Protective Clothing
- E: Face Shield
- F: Hearing Protection
- G: Body Protection

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid…Keep away from heat, sparks, open flame…Keep containers closed…use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH  2  2

FLAMMABILITY  4

DANGEROUS HAZARD  4

PERSONAL PROTECTION  [B]

HAZARD INDEX

4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None

First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.

INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.

Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.

Autoignition: 383°F (195°C)

Hazardous Combustion Products: Oxides of Carbon

Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.

Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496

Evaporation Rate: <1 (Butylacetate = 1)

Solubility in Water: negligible


Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055,
United States the following items are classed in accordance with Section 173.56, Title 49,
Code of Federal Regulations (49 CFR). A copy of your application, all supporting
documentation and a copy of this approval must be retained and made available to DOT
upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER PRODUCT DESIGNATION/PART NUMBER
EX2010040603 Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested
and found to have sufficient residual stabilizers present per US Army Safety Bulletin;
"Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-
1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G
fiberdrum, each containing not more than one hundred and forty (140) pounds of
smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth
and strapping lifting bag, each containing not more than eight hundred and eighty (880)
pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box
with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition
for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND91H071485  
**D533 / M6 propellant**

**Date of analysis:**

**Sample Data**

<table>
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<tr>
<th>Sample</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area %</th>
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**Avg. % Stabilizer for Lot:** 0.463

- **0.30% or more is Stability Code A**
- **0.20% -0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.46 %

**Analyst Signature:**

**Stable** YES  
**Unstable**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**

**Actions to be Taken:**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88A070891  
**D533 / M6 propellant**

**Other Information**
- Sample Data
  - #1: 0.50 g, 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
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<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
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### Avg. % Stabilizer for Lot: 0.82%

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.82 %

**Analyst Signature**

<table>
<thead>
<tr>
<th>Stable</th>
<th>YES</th>
<th>Unstable</th>
</tr>
</thead>
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**Comments**

- CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88H070966  
**D533 / M6 propellant**

**Date of analysis:** Date: 29 JULY 2011

**Other Information**

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</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
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**Standards (ERG-006)**

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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area %</th>
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<td>ppm</td>
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**Sample #**

- Intg. Conc.
- Area %

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<td>600.3</td>
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<td>88.8</td>
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<td>85.2</td>
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**Avg. % Stabilizer for Lot**

0.536

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst**

Kisha Dickerson

**Analyst Signature**

Stable YES Unstable

**Comments**

CATEGORY: A

**Lab. Supervisor Signature**

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87A070677  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 AUG 2010

**Other Information**
- **Sample Data**
  - **Solvent:** ACN
  - **Sample #1:** 0.5000 g, 100 ml

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg Area</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>75.0</td>
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**Avg. % Stabilizer for Lot:** 0.563

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.56 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84E070434  
**D533 / M6 propellant**

**Date of analysis:**  
**Sample Data**  
**Solvent**

- Sample #1  
- *0.50 g*  
- *100 ml*  
- *ACN*

**Other Information**  
**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg.</th>
<th>Conc. Area</th>
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**Avg. % Stabilizer for Lot**  
**0.639**

- *0.30% or more is Stability Code A*  
- *0.20% - 0.29% is Stability Code C*  
- *Less than 0.20% is Stability Code D*

**Analyst**  
**MIKE KILE**

**Avg. Tot. Stabilizers**  
**0.64 %**

**Analyst Signature**  
**Stable YES Unstable**

**Comments**  
**CATEGORY: A**

**Lab. Supervisor Signature**

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82E070115  |  D533 / M6 propellant
Date of analysis:  |  Date: 2 SEPTEMBER 2

Other Information
M6 Propellant

Sample Data
Solvent
#1  |  0.50 g  |  100 ml  |  ACN

<table>
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<th>Standards (ERG-006)</th>
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Avg. % Stabilizer for Lot 0.505
0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst KISHA DICKERSON
Analyst Signature

Avg. Tot. Stabilizers 0.50 %
Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken

019678 EXP_001312
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND82E070114  
**Date of analysis:** Date: 22 NOV 2011  
**Other Information:** M6 Propellant

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<td>2,4' NDPA</td>
<td>50.0</td>
<td>7.38</td>
<td>1001.4</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.893</td>
<td>1609.3</td>
<td>58.8</td>
<td>0.004</td>
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<td></td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.053</td>
<td>2886.9</td>
<td>118</td>
<td>0.004</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.586</td>
<td>5621.7</td>
<td>791.2</td>
<td>0.056</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.383</td>
<td>1381.9</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.367

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers** 0.37 %

**Analyst Signature**  
**Stable** YES | **Unstable**

**Comments**  
CATEGORY: A  
Actions to be Taken
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81G070061  D533 / M6 propellant

Date of analysis:  Date: 12 JULY 2011

Other Information

Sample Data

Solvent

#1  0.50 g  100 ml  ACN

Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.71</td>
<td>111</td>
<td>358.1</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.475</td>
<td>1001</td>
<td>79.1</td>
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<tr>
<td>2,2'-DNDPA</td>
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<td>5.325</td>
<td>95</td>
<td>18335</td>
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<td>50.0</td>
<td>7.791</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.345</td>
<td>1700.8</td>
<td>167.7</td>
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<td>50.0</td>
<td>10.629</td>
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</table>

Avg. % Stabilizer for Lot 0.421

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst Mike Kile

Avg. Tot. Stabilizers 0.42%

Analyst Signature

Stable YES Unstable

Comments

CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken

EXP_001314
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 10 Feb 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Area 1</td>
<td>Area %</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Conc. Area</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.868</td>
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<td>2,4'-DNDPA</td>
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<td>3.292</td>
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<td>2,2'-DNDPA</td>
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<td>4.936</td>
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<td>2,4'-DNDPA</td>
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<td>4NDPA</td>
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<td>2NDPA</td>
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<td>9.362</td>
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<td>DPA</td>
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<td>10.749</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.362</td>
<td>1264.1</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.797  

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.80%

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND80M070009  |  **D533 / M6 propellant**  
**Date of analysis:**  |  **Date:** 20 SEP 2010  
**Other Information**  |  **Sample Data**  
M6 Propellant  |  #1  
Solvent  |  0.5000 g  
|  100 ml  
|  ACN  

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg. ppm</th>
<th>Conc. ppm</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td>50.0</td>
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<td>2,2'-DNDPA</td>
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<td>7.178</td>
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<td>10.355</td>
<td>947.6</td>
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<td>11.977</td>
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<td>2NDPA</td>
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<td>13.451</td>
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<td>0.000</td>
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</table>

### Avg. % Stabilizer for Lot

0.670

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  |  **Avg. Tot. Stabilizers** 0.67%  
**Analyst Signature**  |  Stable YES Unstable  
**Lab. Supervisor Signature**  |  Comments CATEGORY: A  
**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is subject to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and to each party at any time interested in all or any of said property, that every service label performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

<table>
<thead>
<tr>
<th>Shipper: Explo Systems, Inc.</th>
<th>1600 Java Road</th>
<th>Minden, LA 71055</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight Charges: Collect</td>
<td>Prepaid</td>
<td>Location No. 1607</td>
</tr>
<tr>
<td>Charge Account:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of PKGS</td>
<td>No. of UNITS</td>
<td>PROPER SHIPPING NAME AND HAZARD CLASS</td>
</tr>
<tr>
<td>253</td>
<td>42</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name and Signature</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Invoice No</th>
</tr>
</thead>
</table>

FOR CHEMICAL, EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTRAC - DAY OR NIGHT IN THE USA CALL 800-424-6320 IN CANADA (902) 920-0400 ELSEWHERE CALL (703) 527-9867

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By: | Date: | 3-14-13 |

Authorized Receiver

<table>
<thead>
<tr>
<th>Permanent Address of Shipper:</th>
<th>Explo Systems, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 Java Road</td>
<td>Minden, Louisiana 71055</td>
</tr>
<tr>
<td>(318) 382-8700</td>
<td></td>
</tr>
<tr>
<td>DOT Hazardous Material Handling Number</td>
<td></td>
</tr>
<tr>
<td>Local Federal Explosives License No.</td>
<td>5-LA-119-20-1A-00057 (Stripper)</td>
</tr>
</tbody>
</table>
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-14-13

B/L# 2859 TRL 980210

M-6

IND85C-070512  2 PTS
IND85F-070587  2 PTS
IND86F-070062  1 PT
IND82E-070115  2 PTS
IND82E-070474  2 PTS
IND82E-070114  1 PT
IND88D-070716  6 PTS
IND86E-070641  1 PT
IND82E-070434  2 PTS
IND88H-070966  3 PTS
IND88A-070891  1 PT
IND85B-070509  1 PT
IND84K-Y70449  1 PT
IND84E-070430  1 PT
IND82G-070163  2 PTS
IND84A-070324  1 PT
IND86L-070641  1 PT
IND83P-070274  1 PT
IND85J-070596  1 PT
IND82I-070170  1 PT
IND86F-070620  1 PT
IND87D-070113  1 PT
IND81H-070063  2 PTS
IND88L-Y70320  1 PT
IND84K-070448  1 PT
IND88D-070076  1 PT
IND85E-070522  2 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
**MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)**

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

### 1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

### SELECTION 1 - DOCUMENTATION

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2. CARRIER/GOVERNMENT ORGANIZATION

- **APPL**
- **P & R Inc.**

### 3. DATETIME OF INSPECTION

- **2/14/14**

### 4. LOCATION OF INSPECTION

- **Ciado Systems, Inc.**

### 5. OPERATOR(S) NAME(S)

- **Pedro, John**

### 6. OPERATOR(S) LICENSE NUMBER(S)

- **P 320-525-44-066-0-0**

### 7. MEDICAL EXAMINER’S CERTIFICATE

- **2/25/15**

### B. (X if satisfactory at origin)

#### a. MILITARY HAZMAT ENDORSEMENT

- Yes

#### b. VALID LEASE

- Yes

#### c. ROUTE PLAN

- Yes

### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

#### 10. TYPE OF VEHICLE(S)

- **TRACTOR/ TRAILER / DEXON**

#### 11. VEHICLE NUMBER(S)

- **# 7306 / TR# 1**

#### 12. PART INSPECTION (X as applicable)

<table>
<thead>
<tr>
<th>Origin (1)</th>
<th>Destination (2)</th>
<th>Comments (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>UNSAT</td>
<td>SAT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **a. SPARE ELECTRICAL FUSES**
- **b. HOUSING OPERATIVE**
- **c. STEERING SYSTEM**
- **d. WINDSHIELD/WIPERS**
- **e. MIRRORS**
- **f. WARNING EQUIPMENT**
- **g. FIRE EXTINGUISHER**
- **h. ELECTRICAL WIRING**
- **i. LIGHTS AND REFLECTORS**
- **j. FUEL SYSTEM**

#### 13. INSPECTION RESULTS (X one) ACCEPTED

- **ACCEPTED**

#### 14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED

- **REJECTED**

#### 15. REMARKS

- **REMARKS**

### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

#### 18. LOADED IAW APPLICABLE SEPARATION/COMPATIBILITY TABLE OF 49 CFR

<table>
<thead>
<tr>
<th>Origin (1)</th>
<th>Destination (2)</th>
<th>Comments (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>UNSAT</td>
<td>SAT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

- **LOAD PROPERLY SECURED TO PREVENT MOVEMENT**

#### 20. SEALS APPLIED TO CLOSED VEHICLE; TARP APELINED ON OPEN EQUIPMENT

- **SEALS APPLIED TO CLOSED VEHICLE; TARP APELINED ON OPEN EQUIPMENT**

#### 21. PROPER PLACARDS APPLIED

- **PROPER PLACARDS APPLIED**

#### 22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

- **SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS**

#### 23. COPY OF DD FORM 826 FOR DRIVER

- **COPY OF DD FORM 826 FOR DRIVER**

#### 24. SHIPPED UNDER DOT SPECIAL PERMIT 868

- **SHIPPED UNDER DOT SPECIAL PERMIT 868**

### 25. INSPECTOR SIGNATURE (Origin)

- **Signature**

### 26. DRIVER(S) SIGNATURE (Origin)

- **Signature**

### 27. INSPECTOR SIGNATURE (Destination)

- **Signature**

### 28. DRIVER(S) SIGNATURE (Destination)

- **Signature**
# MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

## SECTION I - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
Technical Information Phone No.: 318 382 8700  
For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9360. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>—</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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</table>
SECTION II - HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>PROPELLANT</th>
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</thead>
<tbody>
<tr>
<td>HEALTH</td>
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<tr>
<td>FLAMMABILITY</td>
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PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
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<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>A</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td>B</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>C</td>
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<td>1 = SLIGHT HAZARD</td>
<td>D</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
<td>E</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88A070891  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 10 Nov 2011

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
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<td>0.002</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.139</td>
<td>1982.5</td>
<td>27.328</td>
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<td>0.000</td>
</tr>
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<td>2,4' DNDPA</td>
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<td>7.414</td>
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<td>0.005</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.407</td>
<td>1919.6</td>
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Avg. % Stabilizer for Lot: 0.821

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.82%

**Analyst Signature**  
**Stable** YES Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88H070966  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 29 JULY 2011

**Other Information**  
**M6 Propellant**

**Sample Data**  
**Solvent**  
#1: 0.50 g  
100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.642</td>
<td>125.1</td>
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<td>600.3</td>
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<td>2,4-DNDPA</td>
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<td>3.455</td>
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<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.274</td>
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<td>2,4' DNPD</td>
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<td>4NDPA</td>
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<td>1688.8</td>
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<td>88.8</td>
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<td>694.6</td>
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<td>N-NitrosoDPA</td>
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<td>12.966</td>
<td>1456.1</td>
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<td>0</td>
<td>0.000</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.536

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.54%

**Analyst Signature:**  
**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**D533 / M6 propellant**

**Date of analysis:**  10 AUGUST 2012

**Other Information**

<table>
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<tr>
<th>Solvent</th>
<th>Sample Data</th>
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<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td>ACN</td>
<td></td>
</tr>
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</table>

**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret Intg.</td>
</tr>
<tr>
<td></td>
<td>ppm Time Area 1</td>
</tr>
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<td>4,4’DNDPA</td>
<td>50.0 0.882 8.8</td>
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<td>2,4-DNDPA</td>
<td>50.0 3.343 910.9</td>
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<td>2,2’DNDPA</td>
<td>50.0 5.034 3858.6</td>
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<tr>
<td>2,4’DNPDA</td>
<td>50.0 7.363 1013.2</td>
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<td>4NDPA</td>
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<tr>
<td>2NDPA</td>
<td>50.0 9.95 2919.6</td>
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<td>75.0 12.173 1371.4</td>
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<table>
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<th>Intg. Concentration</th>
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<tbody>
<tr>
<td>112.9 1.283</td>
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<td>0 0.000</td>
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<tr>
<td>22576 0.000</td>
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<td>0 0.000</td>
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<tr>
<td>59.7 0.004</td>
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<td>95.5 0.003</td>
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<tr>
<td>714.1 0.049</td>
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<tr>
<td>0 0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 1.339

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 1.34%

**Analyst Signature**

**Comments**

<table>
<thead>
<tr>
<th>CATEGORY:</th>
<th>A</th>
</tr>
</thead>
</table>

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND85F070587  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 25 Aug 2010

**Other Information**  
M6 Propellant

**Sample Data**  
Sample #1:  
- 0.5000 g
- 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0 2.177</td>
<td>146.5</td>
<td>1821.4 1.243</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0 5.001</td>
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<td>0 0.000</td>
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<td>2,2'-DNDPA</td>
<td>50.0 7.038</td>
<td>2567.5</td>
<td>14427.7 0.000</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0 9.931</td>
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<tr>
<td>4NDPA</td>
<td>50.0 11.434</td>
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<td>2NDPA</td>
<td>50.0 12.813</td>
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<td>200.0 14.19</td>
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<tr>
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<td>75.0 15.18</td>
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</table>

## Analyst

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers** 1.26%

**Analyst Signature** Stable Yes Unstable

**Comments** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

---

EXP_001327
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070448  
**Date of analysis:** 1 Mar 2012  
**Other Information:** M6 Propellant  
**Sample Data:** 
- **Solvent:** ACN  
- **Sample #1:** 0.50 g, 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>2,4-DNPDA</td>
<td>50.0</td>
<td>0.872</td>
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<td>97.7</td>
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<td>2,4-DNPDA</td>
<td>50.0</td>
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<td>2,2' DNPDA</td>
<td>50.0</td>
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<td>2038.4</td>
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<td>2,4' DNPDA</td>
<td>50.0</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
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<td>11.707</td>
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<td>12.518</td>
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<tr>
<td><strong>Avg. % Stabilizer for Lot</strong></td>
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0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Takisha Dickerson**  
**Avg. Tot. Stabilizers:** 0.77%

## Analyst Signature

**Stable**  
**YES**  
**Unstable**

## Comments

**CATEGORY:** A

## Actions to be Taken
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82E070114  D533 / M6 propellant
Date of analysis:  Date: 22 NOV 2011

Other Information
Sample Data
Solvent
#1  0.50 g  100 ml  ACN

M6 Propellant

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Sample #</th>
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<th>Conc.</th>
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<td>1361.9</td>
<td>0</td>
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<td></td>
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Avg. % Stabilizer for Lot: 0.367

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: TAKISHA DICKERSON
Avg. Tot. Stabilizers: 0.37%

Analyst Signature
Stable: YES  Unstable: NO

Comments
CATEGORY: A

Lab. Supervisor Signature
Actions to be Taken

019695
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070115  
**D533 / M6 propellant**

**Other Information**

<table>
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<tr>
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## Standards (ERG-006)

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<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
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<td>2,2’ DNDPA</td>
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<td>12.823</td>
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**Avg. % Stabilizer for Lot:** 0.505

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** KISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
## Straight Bill of Lading

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, and (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055  

**Shipper's No.:** 2866  
**Shipping Date:** 3/17/13  
**Purchase Order No.:**  
**Location No.:** 2423  

**Consignee:** Austin Powder Company  
7, 2, 10 Shaded Rd  
East Camden, AR  

**Fed Lic:** 5-AR-103-00-56-00139  
**Exp. Date:** 5/1/15  

**Customer No.:**  
**Rel. No.:**  

**Charge Account No.:** 670-578-0580  
**Customer P.O. No.:** 670-578-0580  

**42 PT**  
**UN0161, Powder, Smokeless, 1.3C, PG II**  
**#112**  
**EXPLOSIVES 1.3**  

**容许**  
**第105号**  
**第214, 544**  

**Austin Powder Company**  
**East Camden Plant**  

**RECEIVED**  
**MAR 18, 2013**  

**Gross:**  
**Weight:** 39,000  
**Net Explosive Weight:** 35,280  

**Signature:**  
**Invoice No.:**  

**Permanent Address of Shipper:**  
Explo Systems, Inc.  
1600 Java Road  
Minden, Louisiana 71055  
(318) 392-8700  
**Per:**  
**DOT Hazardous Material Handling Number:**  
**Local Federal Explosives License No:** 942-119-20-1A-000057  

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above placards in apparent good order and condition.

**Received By:**  
**Date:** 3/17/13  
**Authorized Receiver:**  

**CONTAINS HAZARDOUS MATERIALS**  
019697  

EXP_001331
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-17-13

B/L# 2866 TRL 7810062

M-6

IND83F-070274   8 PTS
IND84F-070327    10 PTS
IND84K-070448    2 PTS
IND84C-070331    2 PTS
IND82A-070101    3 PTS
IND80M-070011    1 PT
IND83F-070278    2 PTS
IND82H-070169    8 PTS
IND83C-070235    1 PT
IND86E-070616    3 PTS
IND83G-070281    1 PT
IND82F-070162    1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
**Motor Vehicle Inspection (Transporting Hazardous Materials)**

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. **Bill of Lading/Transportation Control Number**: 2044

### Section I - Documentation

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **Carrier/Government Organization**: REVE
3. **Date/Time of Inspection**: 3/17/13
4. **Location of Inspection**: Explo Systems Inc.
5. **Operator(s) Name(s)**: McMartin
6. **Operator(s) License Number(s)**: 9306143000
7. **Medical Examiner's Certificate**: 1-3-13

### Section II - Mechanical Inspection

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Item</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAT SAT</td>
<td>SAT SAT</td>
</tr>
</tbody>
</table>

8. **Military Hazmat Endorsement**: Yes
9. **CVSA Decal Displayed on Commercial Equipment**: Yes

### Section III - Post Loading Inspection

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Item</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAT SAT</td>
<td>SAT SAT</td>
</tr>
</tbody>
</table>

10. **Type of Vehicle(s)**: Tractor/Trailer/D Prom
11. **Vehicle Numbers**: TRP-4124/ 1TRI-7810002

### Section IV - Other Information

12. **Part Inspected (X as applicable)**: Spares Electrical Fuses
13. **Inspection Results**: Accepted

14. **Satellite Motor Surveillance System**: Accepted

15. **Remarks**

16. **Inspector Signature (Origin)**
17. **Inspector Signature (Destination)**

18. **Loaded IAW Applicable Segregation/Compatibility Table of 49 CFR**
19. **Load Properly Secured to Prevent Movement**
20. **Seals Applied to Closed Vehicle; Tarpaulin Applied on Open Equipment**
21. **Proper Placards Applied**
22. **Shipping Papers/DD Form 866 for Government Vehicle Shipments**
23. **Copy of DD Form 628 for Driver**
24. **Shipped Under DOT Special Permit 866**

### Section V - Additional Information

25. **Inspector Signature (Origin)**
26. **Driver(s) Signature (Origin)**

27. **Inspector Signature (Destination)**
28. **Driver(s) Signature (Destination)**
Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted

Technical Information: Phone No.: 318 382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>87.00</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

**Propellant**

**Health**

Value 2 2

**Flammability**

Value 4

**Personal Protection**

Value [B]

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
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<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
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</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td></td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td></td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td></td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
<td></td>
</tr>
</tbody>
</table>

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep OSHA 1910.109; 27
CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:** 19 NOV 2010

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>717.3</td>
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<tr>
<td>2,2'-DNDPA</td>
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<td>7.635</td>
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<td>2,4'-DNDPA</td>
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<td>779</td>
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<tr>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Avg. % Stabilizer for Lot</th>
<th>0.504</th>
</tr>
</thead>
</table>

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
0.50 %

**Analyst Signature**

**Stable**  
YES

**Unstable**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84B070327

**D533 / M6 propellant**

**Date of analysis:**

**Date:** 4 Sep 2012

**Other Information**

**Sample Data**

| Solvent  | #1 | 0.50 g | 100 ml | ACN |

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td></td>
<td>501.9</td>
<td>1.028</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
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<td>23336</td>
<td>0.000</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
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<td>0.000</td>
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<td>2,4' DNDPA</td>
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<td>7.622</td>
<td>980.5</td>
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<td>0</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
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<td>95.7</td>
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<td>2NPDPA</td>
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<td>N-NitrosoDPA</td>
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<td>12.757</td>
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### Avg. % Stabilizer for Lot

<table>
<thead>
<tr>
<th>Stabilizers</th>
<th>Intg. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.086</td>
<td></td>
</tr>
</tbody>
</table>

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst** Mike Kile

**Avg. Tot. Stabilizers** 1.09 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:** 09 OCT 2012

**Sample Data**  
Sample #1: 0.50 g, 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.81</td>
<td>49.3</td>
<td>233.8</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.281</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>4.921</td>
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<td>2,4'-DNPA</td>
<td>50.0</td>
<td>7.019</td>
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<tr>
<td>4NPA</td>
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<td>8.286</td>
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<td>10.745</td>
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<td>11.458</td>
<td>1326</td>
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**Avg. % Stabilizer for Lot:** 0.545

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** MIKE KILE  
**Avg. Tot. Stabilizers:** 0.55 %

**Stable:** YES  
**Unstable:**

**Comments:**  
CATEGORY: A

**Actions to be Taken:**
# HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND84K070448  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 Mar 2012  
**Solvent**  
Sample Data  
Sample #  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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<tbody>
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**Avg. % Stabilizer for Lot: 0.768**

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

| Analyst | Takisha Dickerson  
|---------|-------------------|
| Analyst Signature | Avg. Tot. Stabilizers: 0.77%  
| Stable | YES  
| Unstable | Comments  
| CATEGORY: A | Actions to be Taken |
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83C070235  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 27 JULY 2011

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
</tr>
</tbody>
</table>

| M6 Propellant |

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
<td>396</td>
<td>0.351</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
<td>35.1</td>
<td>0.004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
<td>22444</td>
<td>0.000</td>
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<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.842</td>
<td>1020.3</td>
<td>32.9</td>
<td>0.003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
<td>1634.2</td>
<td>231.7</td>
<td>0.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.693</td>
<td>2956.2</td>
<td>221.1</td>
<td>0.007</td>
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<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
<td>5630.5</td>
<td>417</td>
<td>0.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>417</td>
<td>0.030</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Avg. % Stabilizer for Lot: 0.409

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst Information

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.41 %

**Analyst Signature**

**Stable**  YES  Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 April 2012

**Sample Data**  
Solvent  
#1 0.50 g 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.881</td>
<td>40.9</td>
<td>93.7</td>
<td>0.229</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.279</td>
<td>928</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>4.66</td>
<td>26957</td>
<td>26191</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>6.571</td>
<td>992.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>7.798</td>
<td>1662.7</td>
<td>158.3</td>
<td>0.010</td>
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<td>50.0</td>
<td>8.806</td>
<td>2938.9</td>
<td>98.9</td>
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<td>200.0</td>
<td>10.221</td>
<td>5774.5</td>
<td>1004.4</td>
<td>0.070</td>
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<td>75.0</td>
<td>10.895</td>
<td>1475.9</td>
<td>0</td>
<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.312

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.31 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**D533 / M6 propellant**

**Date of analysis:** Date: 11 JULY 2012

### Other Information

**Sample Data**  
**Solvent**  
Sample #1  
0.50 g  
100 ml  
ACN

### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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<tbody>
<tr>
<td>4,4'-DNDPA</td>
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<td>0.803</td>
<td>32.3</td>
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<td>2,4-DNDPA</td>
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<td>2,2'-DNDPA</td>
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<td>5.155</td>
<td>1995.1</td>
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<td>2,4'-DNDA</td>
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<td>4NDPA</td>
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<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.843

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers:** 0.84 %

### Analyst Signature

**Stable:** YES  
**Unstable:**

### Lab. Supervisor Signature

**Comments**  
**CATEGORY:** A

**Actions to be Taken**

---

Form #158  
Original Print Date:07/19/2010  
019711  
EXP_001345
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 27 JULY 2011

### Other Information
- **Sample Data**  
  - #1  
  - 0.50 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
<td>622.1</td>
<td>0.552</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
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<td>0.000</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
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<td>0.000</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.842</td>
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<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
<td>1634.2</td>
<td>48.5</td>
<td>0.003</td>
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<tr>
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<td>50.0</td>
<td>10.693</td>
<td>2956.2</td>
<td>98.3</td>
<td>0.003</td>
</tr>
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<td>12.201</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Average % Stabilizer for Lot
- 0.590

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- **Takisha Dickerson**

### Analyst Signature
- **Stable**  
  - **YES**  
  - **Unstable**

### Comments
- **CATEGORY:** A

### Lab. Supervisor Signature
- actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82A070101  
**D533 / M6 propellant**

**Date of analysis:** 28 June 2012

### Other Information

- **Sample Data**
  - Solvent
  - #1  
  - 0.50 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Int. Area 1</th>
<th>Int. Area</th>
<th>Conc. %</th>
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<tbody>
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<td>4,4' DNDPA</td>
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<td>0.874</td>
<td>19.1</td>
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<td>2,4-DNDPA</td>
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<td>2,2' DNDPA</td>
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<td>4NDPA</td>
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<td>7.273</td>
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<td>1782.9</td>
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<td>0.003</td>
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<td>11.353</td>
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\[
\text{Avg. \% Stabilizer for Lot: } 0.693
\]

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

- **Takisha Dickerson**
- **Avg. Tot. Stabilizers:** 0.69 %

### Analyst Signature

- Stable: YES  
- Unstable:  
- Comments: CATEGORY: A

### Lab. Supervisor Signature

- Actions to be Taken

---

*Form #158*

019713
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND80M070011  
**D533 / M6 propellant**  
**Date of analysis:** Date: 22 March 2012

#### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
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<td>50.0</td>
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<td>2,4'-DNPDA</td>
<td>50.0</td>
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<td>588.9</td>
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<td>0.000</td>
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#### Avg. % Stabilizer for Lot

0.334

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.33 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (content and condition of contents of packages unknown, consigned, and destined as indicated below), which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service listed performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (i) in Uniform Freight Classification in effect on the date hereof, it this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if it this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Expio Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By R/R

Freight Charges: Collect Prepaid Location No.

Shipper’s No. 2868

Shipping Date 3/14/13
Purchase Order No.

Consigned to

Mail or Street Address of Consignee — For purposes of notification only

Destination

Fed Lic. Exp. Date

State Lic. Exp. Date

County

Customer No.

Route

Charge Account of

Customer P.O. No.
Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EMERGENCY RESPONSE PROCEDURE NO.</th>
<th>EXEMPTION “DOT”</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
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<tbody>
<tr>
<td>250 lbs.</td>
<td>100 lbs.</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
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<td>EXPLOSIVES 1.3</td>
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<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300 IN CANADA (ERF #2-0040) 800-591-3636 ELSEWHERE CALL (703) 927-3887 — www.chemtrec.com

Permanent Address of Shipper:
Expio Systems, Inc.
1600 Java Road
Minden, Louisiana 71055
(318) 382-6700

Per

DOT Hazardous Material Handling Number
Local Federal Explosives License No. 5-LA-119-20-1A-00057
(Shipper)

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received by

By

Agent in receipt and has this Shipping Order.

019715

CONTAINS HAZARDOUS MATERIALS

EXP_001349
# AUSTIN POWDER PACKING LIST

**SHIPMENT DATE 3-18-13**

B/L# 2868 TRL 980210

**M-6**

IND83F-070274  1 PTS  
IND81G-070061  11 PTS  
IND81D-070020  10 PTS  
IND84G-070326  9 PTS  
IND84L-070454  1 PTS  
IND81L-070074  2 PTS  
IND81D-070015  6 PTS  
IND82L-070219  1 PTS  
IND81E-070022  1 PT  

42 PTS WITH 6 FB @140 LBS PER DRUM

**TOTAL 35,280 LBS**

[Signature]

LIONEL KOONS  

EXPLO SYSTEMS INC
This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

### SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

**3/12/13**

#### 2. CARRIER/GOVERNMENT ORGANIZATION

**Reve**

#### 3. DATE/TIME OF INSPECTION

**3/12/13**

#### 4. LOCATION OF INSPECTION

**Republic Systems Inc.**

#### 5. OPERATOR(S) NAME(S)

**Mark H. Milam**

#### 6. OPERATOR(S) LICENSE NUMBER(S)

**R30233004 NO**

#### 7. MEDICAL EXAMINER'S CERTIFICATE*

**1/3/15**

---

### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk (*) shall be checked on all incoming loaded equipment.

#### 10. TYPE OF VEHICLE(S)

**Tractor/Trailer/ODom**

#### 11. VEHICLE NUMBERS

**TRAC QPO 362 TVL U 80310**

#### 12. PARTS INSPECTED (X as applicable)

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<th>DESTINATION</th>
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<tbody>
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</tr>
<tr>
<td>UNSAT</td>
<td>UNSAT</td>
</tr>
</tbody>
</table>

- **a. SPARE ELECTRICAL FUSES**
- **b. HORN OPERATIVE**
- **c. STEERING SYSTEM**
- **d. WINDSHIELD/WIPERS**
- **e. MIRRORS**
- **f. WARNING EQUIPMENT**
- **g. FIRE EXTINGUISHER**
- **h. ELECTRICAL WIRING**
- **i. LIGHTS AND REFLECTORS**
- **J. FUEL SYSTEM**
- **k. EXHAUST SYSTEM**
- **l. BRAKE SYSTEM**
- **m. SUSPENSION**
- **n. COUPLING DEVICES**
- **o. CARGO SPACE**
- **p. LANDING GEAR**
- **q. TIRES, WHEELS, RIMS**
- **r. TAILGATE/DOORS**
- **s. TARPALIN**
- **t. OTHER (Specify)**

#### 13. INSPECTION RESULTS (X one)

- **ACCEPTED**
- **REJECTED**

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

#### 14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one)

- **ACCEPTED**
- **REJECTED**

#### 15. REMARKS

---

### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>SAT</td>
</tr>
<tr>
<td>UNSAT</td>
<td>UNSAT</td>
</tr>
</tbody>
</table>

- **18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR**
- **19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT**
- **20. SEALS APPLIED TO CLOSED VEHICLE; TARPALIN APPLIED ON OPEN EQUIPMENT**
- **21. PROPER PLACARDS APPLIED**
- **22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS**
- **23. COPY OF DD FORM 626 FOR DRIVER**
- **24. SHIPPED UNDER DOT SPECIAL PERMIT 968**

#### 25. INSPECTOR SIGNATURE (Origin)

**Mark H. Milam**

#### 26. DRIVER(S) SIGNATURE (Origin)

**Mark H. Milam**

#### 27. INSPECTOR SIGNATURE (Destination)

**Mark H. Milam**

#### 28. DRIVER(S) SIGNATURE (Destination)

**Mark H. Milam**
# MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

**SECTION I - PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td></td>
<td>87.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2
FLAMMABILITY 4
PHYSICAL HAZARD
PERSONAL PROTECTION [B]

Routes of Entry: Inhalation; Skin; Ingestion. Carcinogenicity: None.

First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.

INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.

Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.

Autoignition: 383°F (195°C)

Hazardous Combustion Products: Oxides of Carbon.

Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.

Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.

Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible

Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84L070454  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 MAY 2012

**Other Information**  
M6 Propellant

**Sample Data**  

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-DNDPA</td>
<td>50.0 0.867</td>
<td>83.7</td>
<td>400.6</td>
<td>0.479</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0 3.338</td>
<td>1156.5</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2,2’-DNDPA</td>
<td>50.0 5.017</td>
<td>5373.7</td>
<td>23342</td>
<td>0.000</td>
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<tr>
<td>2,4’-DNPA</td>
<td>50.0 7.147</td>
<td>1283.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 8.595</td>
<td>2061.4</td>
<td>46.3</td>
<td>0.002</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0 9.687</td>
<td>3694.9</td>
<td>94.1</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 11.119</td>
<td>7683.7</td>
<td>721.2</td>
<td>0.038</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 11.99</td>
<td>2133.1</td>
<td>0.000</td>
<td></td>
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</tbody>
</table>

## Avg. % Stabilizer for Lot: 0.521

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.52 %  
**Analyst Signature:**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: **A**  
**Actions to be Taken:**
# HPLC Propellant Stability Report

**Lot Number:** IND84G070326  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 18 JULY 2012

### Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mass</th>
<th>Volume</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
<td>498.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.365</td>
<td>949.7</td>
<td>0</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.091</td>
<td>2605.4</td>
<td>24044</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.514</td>
<td>1047.9</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
<td>1698.8</td>
<td>49.1</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.142</td>
<td>3039.5</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.585</td>
<td>6044.7</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.4</td>
<td>1395.6</td>
<td>0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.430

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.43%

### Analyst Signature

![Signature]

### Comments

**CATEGORY:** A

### Actions to be Taken

![Signature]
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:** Date: 27 JULY 2011

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.894</td>
<td>112.8</td>
<td>622.1</td>
<td>0.552</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.842</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
<td>1634.2</td>
<td>48.5</td>
<td>0.003</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.693</td>
<td>2956.2</td>
<td>98.3</td>
<td>0.003</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
<td>5630.5</td>
<td>451.4</td>
<td>0.032</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

0.590

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
0.59 %

**Analyst Signature**

**Stable** YES  
**Unstable**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070074  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 SEPT 2011

**Other Information**  
M6 Propellant

**Sample Data**  
Solvent  
#1  0.50 g  100 ml  ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret ppm</th>
<th>Intg.</th>
<th>Time</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.866</td>
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<td>504.3</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.45</td>
<td>959.2</td>
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<td>0</td>
<td>0.000</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.27</td>
<td>2749.5</td>
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<td>21863</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.695</td>
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<td>0.000</td>
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<td>9.247</td>
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<td>50.0</td>
<td>10.528</td>
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<td>96.6</td>
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<td>5992.2</td>
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<td>593</td>
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<td>75.0</td>
<td>12.922</td>
<td>1413.2</td>
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<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.819

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** MIKE KILE  
**Avg. Tot. Stabilizers:** 0.82 %

**Analyst Signature**  
**Stable:** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 OCT 2010

## Other Information

**Sample Data**  
- **Solvent:** #1 0.5000 g  
  - 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (min)</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>60.0</td>
<td>5.024</td>
<td>281.8</td>
<td></td>
<td>0.839</td>
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<tr>
<td>2,4-DNDPA</td>
<td>60.0</td>
<td>10.59</td>
<td>329</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>60.0</td>
<td>12.176</td>
<td>376.1</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>12.67</td>
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<td>35.7</td>
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<td>664.1</td>
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<td>50.0</td>
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<td>75.0</td>
<td>18.917</td>
<td>329.9</td>
<td>158.8</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:**  
0.854

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Kisha Dickerson**  
**Avg. Tot. Stabilizers:** 0.85 %  
Stable: YES  
Unstable: 

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

### Sample Data

**Sample**

| Solvent   | #1  | 0.5000 g | 100 ml | ACN |

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>ppm</th>
<th>Time</th>
<th>Area</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2,4-DNDA</td>
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<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
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<tr>
<td>2,4' DNDPA</td>
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<td>11.213</td>
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<tr>
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<td>0.063</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.237

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers** 2.24%

### Analyst Signature

**Stable** YES  
**Unstable**

### Lab. Supervisor Signature

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.71</td>
<td>111</td>
<td>358.1</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.475</td>
<td>1001</td>
<td>79.1</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.325</td>
<td>95</td>
<td>18335</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.791</td>
<td>1061.3</td>
<td>83.2</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.345</td>
<td>1700.8</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.629</td>
<td>3041.2</td>
<td>330.5</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.152</td>
<td>5943.4</td>
<td>913.3</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.034</td>
<td>1443.1</td>
<td>111.8</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.421

**0.30% or more is Stability Code A**
**0.20% - 0.29% is Stability Code C**
**Less than 0.20% is Stability Code D**

**Analyst:** Mike Kile

**Avg. Tot. Stabilizers:** 0.42%

**Analyst Signature:**

**Stable:** YES

**Unstable:**

**Comments: CATEGORY:** A

**Actions to be Taken:**

**Form #1550**

019727 EXP_001361
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 10 Feb 2012

### Other Information
- **Sample Data**
  - #1  
  - 0.50 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.868</td>
<td>53.7</td>
<td>398.1</td>
<td>0.741</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.292</td>
<td>916.2</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.936</td>
<td>839.4</td>
<td>22071</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>6.943</td>
<td>1003.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.309</td>
<td>1616.5</td>
<td>50</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.362</td>
<td>2912</td>
<td>113.3</td>
<td>0.004</td>
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<tr>
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<td>200.0</td>
<td>10.749</td>
<td>5497.2</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.362</td>
<td>1264.1</td>
<td>355.2</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.797

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- **Mike Kile**

### Analyst Signature

### Avg. Tot. Stabilizers 0.80 %

### Stable YES Unstable

### Comments
- CATEGORY: A

### Lab. Supervisor Signature

### Actions to be Taken
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) Uniform Freight Classification in effect on the date hereof.

If this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff it is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect  Prepaid XX

Location No.

Shipper's No. 2867

Shipping Date 3/18/13

Purchase Order No.

(Mail or Street Address of Consignee — For purposes of notification only)

Consigned to

Rame Co.

Fed Lic. 518-1057-30-55-00139

Exp. Date 5/1/15

Exp. Date

Exp. Date

Exp. Date

Destination

7-11-10 Bluffton Rd

State

State Lic.

County

East Cameron

Route

Charge Account of 717-574-0670

Customer P.O. No.

Rel. No.

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMREC — DAY OR NIGHT

IN THE USA CALL 800-424-9300 IN CANADA (ERP 92-0040) 800-591-3698 ELSEWHERE CALL (703) 527-3687

019729

EXP_001363
**STRAIGHT BILL OF LADING**

**NOT NEGOTIABLE**

Received, subject to the classification and tariffs in effect on the date of issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, end destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereinafter performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof. It this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading. set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.  
1600 Java Road, Minden, LA 71055

**Freight Charges:** Collect  
**Prepaid** XXX  
**Location No.** 2431

**Shipper's No.** 2867  
**Shipping Date** 3/18/13  
**Purchase Order No.**

**Consignee to:** Explo Systems, Inc.  
7420 Old Minden Rd, Minden, LA 71055

**Fed Lic.** 183-425-56-409  
**Exp. Date** 5/1/15

**State Lic.** Exp. Date  
**Customer No.**

**Charge Account of** 137-770-774-0670-64302  
**Customer P.O. No.** Rel. No.

<table>
<thead>
<tr>
<th>Shipped No. of PKGS</th>
<th>Shipped No. of UNITS</th>
<th>Proper Shipping Name and Hazard Class</th>
<th>Returned No. of PKGS</th>
<th>Returned No. of UNITS</th>
<th>Exemption Code</th>
<th>HM</th>
<th>Placards Applied to Railroad or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>25/14</td>
<td>420T</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td>2000-040005</td>
<td>X</td>
<td></td>
<td>EXPLOSIVES 1.3</td>
</tr>
</tbody>
</table>

**Placard:**  
- Truck No. 7306  
- Trailer No. 6810057

**Gross Weight:** 35,000  
**Weight:** 35,200  
**Net Explosive Weight:** 35,200

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Signature:**

**Invoice No.:**

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC – DAY OR NIGHT IN THE USA CALL 800-424-9300 IN CANADA (ERP #20040) 800-661-3638 ELSEWHERE CALL (773) 927-0887 CHEMTREC 645879**

I have been offered placards identifying the shipment as specified in 49 CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

**Received By:** G CONSIGNEE  
**Date:** 3-16-15

**G CARRIER**

**Date:**

**AUTHORIZED RECEIVER**

019730

EXP_001364
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-18-13

B/L# 2867 TRL 6810057

M-6

IND83F-070274  4 PTS
IND81G-070061  12 PTS
IND81E-070021  1 PT
IND81D-070020  6 PTS
IND84G-070326  5 PTS
IND84L-070454  3 PTS
IND81L-070074  5 PTS
IND81D-070015  4 PTS
IND82I-070219  2 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
**MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)**

(Read Instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

2. CARRIER/GOVERNMENT ORGANIZATION

3. DATE/TIME OF INSPECTION

4. LOCATION OF INSPECTION

5. OPERATOR(S) NAME(S)

6. OPERATOR(S) LICENSE NUMBER(S)

7. MEDICAL EXAMINER’S CERTIFICATE*

8. (X if satisfactory at origin)

   a. MILITARY HAZMAT ENDORSEMENT
   b. VALID LEASE*
   c. ROUTE PLAN
   d. ERG OR EQUIVALENT COMMERCIAL
   e. DRIVER’S VEHICLE INSPECTION REPORT*
   f. COPY OF 49 CFR PART 397

9. CVSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT*

10. TYPE OF VEHICLE(S)

    TRACTOR/TRACTER/COM**

11. VEHICLE NUMBER(S)

12. PART INSPECTED

   (X as applicable)

   a. SPARE ELECTRICAL FUSES
   b. HORN OPERATIVE
   c. STEERING SYSTEM
   d. WINDSHIELD WIPERS
   e. MIRRORS
   f. WARNING EQUIPMENT
   g. FIRE EXTINGUISHER
   h. ELECTRICAL WIRING
   i. LIGHTS AND REFLECTORS
   j. FUEL SYSTEM

13. INSPECTION RESULTS (X one)

   ACCEPTED

   REJECTED

   (If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one)

   ACCEPTED

   REJECTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)**

17. INSPECTOR SIGNATURE (Destination)**

18. LOADED INAPPLICABLE SEGREGATION/INCOMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPALIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 826 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 826 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 888

25. INSPECTOR SIGNATURE (Origin)**

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)**

28. DRIVER(S) SIGNATURE (Destination)

DD FORM 690 MAR 2007

*PREVIOUS EDITION IS OBSOLETE
**SECTION I - PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted

*Technical Information Phone No.: 318.382.8700*

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>—</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER PRODUC DESIGNATION/PART NUMBER
EX2010040603 Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC Propellant Stability Report

**Lot Number:** IND84L070454  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 MAY 2012

**Other Information:**  
**M6 Propellant**

## Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Area 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Area 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.867</td>
<td>83.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.338</td>
<td>1156.5</td>
<td></td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.017</td>
<td>5373.7</td>
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<td></td>
</tr>
<tr>
<td>2,4'-DNDA</td>
<td>50.0</td>
<td>7.147</td>
<td>1283.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDA</td>
<td>50.0</td>
<td>8.595</td>
<td>2061.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2NDA</td>
<td>50.0</td>
<td>9.887</td>
<td>3694.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.119</td>
<td>7683.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.99</td>
<td>2133.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Analysis

**Average % Stabilizer for Lot:** 0.521

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Analyst Signature:**

**Avg. Tot. Stabilizers:** 0.52%

<table>
<thead>
<tr>
<th>Stable</th>
<th>Unstable</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>Unstable</td>
</tr>
</tbody>
</table>

**Comments:** CATEGORY: A

**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**Date of analysis:** Date: 18 JULY 2012  
**Other Information:**  
**Sample Data**  
| Solvent | #1 | 0.50 g | 100 ml | ACN |

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Time</th>
<th>Area 1</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
<td></td>
<td></td>
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<td>498.4</td>
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**Avg. % Stabilizer for Lot:** 0.430

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.43%  
**Analyst Signature:** Dickerson  
**Comments:** CATEGORY: A  
**Lab. Supervisor Signature:**

**Stable** YES | **Unstable**

**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number: IND83F070274</th>
<th>D533 / M6 propellant</th>
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<tbody>
<tr>
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<td>Date: 27 JULY 2011</td>
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## Other Information

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<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
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</table>

## M6 Propellant

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Concentration ppm</th>
<th>Ret Time</th>
<th>Intg Area 1</th>
<th>Intg %</th>
<th>Conc Area</th>
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<tbody>
<tr>
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## Avg. % Stabilizer for Lot

|          | 0.590 |

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

<table>
<thead>
<tr>
<th>Analyst</th>
<th>Takisha Dickerson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Signature</td>
<td>Stable YES Unstable</td>
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<tr>
<td>Lab. Supervisor Signature</td>
<td>Comments CATEGORY: A</td>
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<tr>
<td>Actions to be Taken</td>
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# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070074  
**D533 / M6 propellant**

**Date of analysis:** Date: 19 SEPT 2011

## Other Information

M6 Propellant

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<tr>
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<tr>
<td></td>
<td>100 ml</td>
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<tr>
<td></td>
<td>ACN</td>
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## Standards (ERG-006)

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<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
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<td>Area</td>
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<td>%</td>
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<td>1413.2</td>
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\[
0.30\% \text{ or more is Stability Code A} \\
0.20\% - 0.29\% \text{ is Stability Code C} \\
\text{Less than 0.20\% is Stability Code D}
\]

<table>
<thead>
<tr>
<th>Analyst</th>
<th>MIKE KILLE</th>
<th>Avg. Tot. Stabilizers</th>
<th>0.82 %</th>
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</thead>
</table>

## Analyst Signature


**Stable**  
**Unstable**  

**Comments**  
**CATEGORY:** A

## Lab. Supervisor Signature

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81D070015

Date of analysis: Date: 20 OCT 2010

Other Information

M6 Propellant

Sample Data

Sample #1

0.5000 g

100 ml

ACN

Solvent

Standards (ERG-006)

Stabilizer

Conc. Ret

Intg.

Area 1

ppm

Time

Area

Intg.

Conc.

% Area

4,4' DNDPA

50.0

5.024

281.6

2363.4

0.839

2,4-DNDPA

50.0

10.59

329

0

0.000

2,2' DNDPA

50.0

12.176

376.1

0

0.000

2,4' DNDPA

50.0

12.67

275.3

35.7

0.013

4NDPA

50.0

13.632

664.1

0

0.000

2NDPA

50.0

14.943

1788.8

34.8

0.002

DPA

200.0

16.114

286

0

0.000

N-NitrosoDPA

75.0

19.917

329.9

158.8

0.000

Avg. % Stabilizer for Lot: 0.854

0.30% or more is Stability Code A

0.20% - 0.29% is Stability Code C

Less than 0.20% is Stability Code D

Analyst: Kisha Dickerson

Avg. Tot. Stabilizers: 0.85 %

Analyst Signature

Stable: YES

Unstable: 

Comments:

CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81G070061  
**Date of analysis:** Date: 12 JULY 2011  
**D533 / M6 propellant**  
**Other Information**  
**M6 Propellant**

**Sample Data**  
| Solvent | #1 | 0.50 g | 100 ml | ACN |

## Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. ppm</th>
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<th>%</th>
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**Avg. % Stabilizer for Lot:** 0.421

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42 %

**Analyst Signature**  
**Stable** YES | Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:** Date: 10 Feb 2012

**Other Information**

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**M6 Propellant Standards (ERG-006)**

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**Avg. % Stabilizer for Lot:** 0.797

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.80%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to cury to its usual place of delivery of said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading 

Shipment: 1

Load

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Shipper's No. 2865

At

By R Y UK

Prepaid XXV

Location No. 2423

Freight Charges: Collect

Charging Account: 4-170574-0580-CVT 302

Consigned to: Austin Powder Co.

destination: 7611-10 Blavoyn Rd

Exped. Date: 1/1/15

Exp. Date: 5/1/15

Fed Lic. S-AR-103-30-5E-00139

State Lic.

Customer No. 171277

State:

Charge Account: 170574-0580-CVT 302

Customer P.O. No. 171277

Rel. No.

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature: 

Invoice No. 

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC -- DAY OR NIGHT

IN THE USA CALL 800-424-9300

IN CANADA (ERF #2-0040) 800-861-3656

ELSEWHERE CALL (703) 527-3887

I have been offered plaquards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By: 

Date 3/17/13

AUTHORIZED RECEIVER

019745

EXP_001379
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-18-13

B/L# 2B67 TRL 6810057

M-6

IND83F-070274  4 PTS
IND81G-070061  12 PTS
IND81E-070021   1 PT
IND81D-070020   6 PTS
IND84G-070326   5 PTS
IND84L-070454   3 PTS
IND81L-070074   5 PTS
IND81D-070015   4 PTS
IND82L-070219   2 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPO SYSTEMS INC

35,280

HAD TO WIPE OFF SOME DRUMS
# MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

(Read Instructions before completing form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

### SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER: 2165

2. CARRIER/GOVERNMENT ORGANIZATION: PRK

3. DATE/TIME OF INSPECTION: 3/17/13

4. LOCATION OF INSPECTION: YUPO SYSTEMS 5300E

5. OPERATOR(S) NAME(S): T. HENNESSY

6. OPERATOR(S) LICENSE NUMBER(S): 5320-825-4996-0

7. MEDICAL EXAMINER'S CERTIFICATE*: 2/25/15

8. (X if satisfactory at origin)
   
   a. MILITARY HAZMAT ENDORSMENT
   
   b. VALID LEASE
   
   c. ROUTE PLAN
   
   d. ERG OR EQUIVALENT COMMERCIAL: YES NO
   
   e. DRIVER'S VEHICLE INSPECTION REPORT: YES NO
   
   f. TRUCK/TRACTOR
   
   g. TRAILER

### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>TYPE OF VEHICLE(S)</th>
<th>TRACTOR/TRACTER/ DROM</th>
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<tr>
<td>10. TYPE OF VEHICLE(S)</td>
<td>TRACTOR/TRACTER/ DROM</td>
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<table>
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<th>EXHAUST SYSTEM</th>
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<td>DESTINATION (2)</td>
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<td>COMMENTS (3)</td>
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<table>
<thead>
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<th>HORN OPERATIVE</th>
<th>BRAKE SYSTEM*</th>
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<td>ORIGIN (1)</td>
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<td>DESTINATION (2)</td>
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<td>COMMENTS (3)</td>
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<table>
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<td>SAT</td>
</tr>
<tr>
<td>COMMENTS (3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WINDSHIELD/WIPERS</th>
<th>COUPLING DEVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIGIN (1)</td>
<td>SAT</td>
</tr>
<tr>
<td>DESTINATION (2)</td>
<td>SAT</td>
</tr>
<tr>
<td>COMMENTS (3)</td>
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<table>
<thead>
<tr>
<th>MIRRORS</th>
<th>CARGO SPACE</th>
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<tbody>
<tr>
<td>ORIGIN (1)</td>
<td>SAT</td>
</tr>
<tr>
<td>DESTINATION (2)</td>
<td>SAT</td>
</tr>
<tr>
<td>COMMENTS (3)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING EQUIPMENT</th>
<th>LANDING GEAR*</th>
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<tbody>
<tr>
<td>ORIGIN (1)</td>
<td>SAT</td>
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<tr>
<td>DESTINATION (2)</td>
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<tr>
<td>COMMENTS (3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIRE EXTINGUISHER*</th>
<th>TIRES, WHEELS, RIMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIGIN (1)</td>
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</tr>
<tr>
<td>DESTINATION (2)</td>
<td>SAT</td>
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<tr>
<td>COMMENTS (3)</td>
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</tr>
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<table>
<thead>
<tr>
<th>ELECTRICAL WIRING</th>
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<tbody>
<tr>
<td>ORIGIN (1)</td>
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<td>SUN</td>
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<td>SUN</td>
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<table>
<thead>
<tr>
<th>LIGHTS AND REFLECTORS</th>
<th>TARPUSN*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIGIN (1)</td>
<td>SAT</td>
</tr>
<tr>
<td>DESTINATION (2)</td>
<td>SAT</td>
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<tr>
<td>COMMENTS (3)</td>
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<table>
<thead>
<tr>
<th>FUEL SYSTEM*</th>
<th>OTHER (Specify)</th>
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<tbody>
<tr>
<td>ORIGIN (1)</td>
<td>SAT</td>
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<tr>
<td>DESTINATION (2)</td>
<td>SAT</td>
</tr>
<tr>
<td>COMMENTS (3)</td>
<td></td>
</tr>
</tbody>
</table>

13. INSPECTION RESULTS (X one) ACCEPTED ✓ REJECTED
   
   (If rejected give reason under "Remarks." Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED ✓ REJECTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>LOADED LAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>LOAD PROPERLY SECURED TO PREVENT MOVEMENT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SEALS APPLIED TO CLOSED VEHICLE; TARPUSN APPLIED ON OPEN EQUIPMENT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PROPRIETY PLACARDS APPLIED</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPPMENTS</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>COPY OF DD FORM 256 FOR DRIVER</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SHIPPED UNDER DOT SPECIAL PERMIT 868</th>
</tr>
</thead>
</table>

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
# Material Safety Data Sheet

**Propellant (Wetted)**

## Section I - Product Identification

**Product Name:** Propellant, Explosive, Solid, Wetted  
**Technical Information Phone No.:** 318.382.8700  
For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>--</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH  2  2

FLAMMABILITY  4

PHYSICAL HAZARD  4

PERSONAL PROTECTION [B]

HAZARD INDEX

4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety
Emergency Response

112 | CLASS A OR B | GUIDE

Explosives - Division 1.1, 1.2, 1.3, 1.5, 1.6

For information on compatibility group letters, refer to Glossary section.

Potential Hazards

112 | CLASS A OR B | GUIDE

Explosives - Division 1.1, 1.2, 1.3, 1.5, 1.6

For information on compatibility group letters, refer to Glossary section.

Potential Hazards
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 21 SEP 2010

### Other Information

- **Sample Data**
  - Solvent: 
    - #1
    - 0.5000 g
    - 100 ml
    - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDA</td>
<td>50.0</td>
<td>2.168</td>
<td>128.5</td>
<td>113.7</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.033</td>
<td>432</td>
<td>217.6</td>
</tr>
<tr>
<td>2,2'-DNDA</td>
<td>50.0</td>
<td>7.206</td>
<td>480.6</td>
<td>820.7</td>
</tr>
<tr>
<td>2,4'-DNDA</td>
<td>50.0</td>
<td>10.409</td>
<td>485.4</td>
<td>222.7</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.024</td>
<td>1113.3</td>
<td>522</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>13.489</td>
<td>784</td>
<td>396.3</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.97</td>
<td>2121.4</td>
<td>1130.5</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>16.167</td>
<td>483.9</td>
<td>299.3</td>
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</table>

### Sample #

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### Avg. % Stabilizer for Lot

0.495

### Notes

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

- Kisha Dickerson

### Analyst Signature

### Avg. Tot. Stabilizers

0.50 %

### Stable

- YES

### Unstable

### Comments

Gabric: A

### Actions to be Taken

EXP_001387
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND84B070327  
**D533 / M6 propellant**

**Date of analysis:**  
**Sample Data**  
**Solvent**  
**#1**  
0.50 g  
100 ml  
ACN

---

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>501.9</td>
<td>1.028</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>23336</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>95.7</td>
<td>0.006</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>104</td>
<td>0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>673.4</td>
<td>0.047</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

---

**Avg. % Stabilizer for Lot:** 1.086

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

---

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.09 %  
**Comments:**  
**CATEGORY:** A  

---

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070448  
**D533 / M6 propellant**

**Date of analysis:** 1 Mar 2012

**Sample Data**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample #</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.872</td>
<td>13.8</td>
<td></td>
<td>97.7</td>
<td>0.708</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.42</td>
<td>982.9</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>2038.4</td>
<td></td>
<td>23346</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.486</td>
<td>1060.4</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.991</td>
<td>1708.9</td>
<td></td>
<td>47.8</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.17</td>
<td>3062.7</td>
<td></td>
<td>91.8</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.707</td>
<td>6061.6</td>
<td></td>
<td>816.4</td>
<td>0.054</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.518</td>
<td>1461.9</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.768

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.77 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:** 27 JULY 2011

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M8 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm   Time</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>60.0   0.694</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0   3.477</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>60.0   5.339</td>
</tr>
<tr>
<td>2,4'-DNPA</td>
<td>50.0   7.842</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0   9.392</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0   10.693</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0  12.201</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0   13.103</td>
</tr>
</tbody>
</table>

| Avg. % Stabilizer for Lot | 0.590 |

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  Takisha Dickerson  
**Avg. Tot. Stabilizers**  0.59 %

**Analyst Signature**  
**Stable**  YES  **Unstable**

<table>
<thead>
<tr>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATEGORY: A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lab. Supervisor Signature</th>
<th>Actions to be Taken</th>
</tr>
</thead>
</table>
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND80M070011  DS33 / M6 propellant

Date of analysis:  Date: 22 March 2012

Other Information
M6 Propellant

Sample Data
Sample #1
0.50 g  100 ml  ACN

Standards (ERG-008)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.897</td>
<td>14.6</td>
<td>40.4</td>
<td>0.277</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.327</td>
<td>870.9</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.054</td>
<td>688.7</td>
<td>29012</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNPA</td>
<td>50.0</td>
<td>7.298</td>
<td>945.9</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.792</td>
<td>1528.5</td>
<td>144</td>
<td>0.009</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.019</td>
<td>2755.3</td>
<td>103.4</td>
<td>0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.357</td>
<td>5392.9</td>
<td>588.9</td>
<td>0.044</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.286</td>
<td>1332.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.334

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson

Avg. Tot. Stabilizers: 0.33 %

Analyst Signature

Stable: YES  Unstable

Comments

CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC Propellant Stability Report

**Lot Number:** IND80M070009  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 SEP 2010

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
</tbody>
</table>

**Standards (ERG-005)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'DNDPA</td>
<td>50.0</td>
<td>2.113</td>
<td>241.3</td>
<td>1503.9</td>
<td>0.623</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>4.997</td>
<td>1505.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'DNDPA</td>
<td>50.0</td>
<td>7.178</td>
<td>3394.6</td>
<td>16988.6</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'DNCPA</td>
<td>50.0</td>
<td>10.355</td>
<td>947.6</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.977</td>
<td>1346.1</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>13.451</td>
<td>1788.2</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.881</td>
<td>5045.5</td>
<td>586</td>
<td>0.046</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>16.02</td>
<td>1339.6</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  
0.670

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
0.67 %

**Analyst Signature**  
Stable  
**Unstable**  

**Lab. Supervisor Signature**  
Comments  
**CATEGORY:** A

**Actions to be Taken**
## STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of consigned and destined as indicated beliefs to its usual place of delivery or said destination. It is on the route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (t) in Uniform Freight Classification in effect on the date hereof. It this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff in this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of said shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055

**Shipper’s No.:** 2870  
**Shipping Date:** 3/15/13  
**Purchase Order No.:**

**Freight Charges:** Collect  
**Prepaid:** YYY  
**Location No.:** 2431/2434

**Consigned to:** AUSTIN POWDER Co.  
Fed Lic. 52-AR-12-20-56-60/39  
Exp. Date 5/1/39

**Destination:** 7-LE-10 BANDY RD  
State:  
**County:** EAST CAMDEN AR  
**Customer No.:**

**Charge Account:** 019759  
**Customer P.O. No.:**

<table>
<thead>
<tr>
<th>SHIPPED No. of PROS</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PROS</th>
<th>RETURNED No. of UNITS</th>
<th>EMERGENCY RESPONSE GUIDE NO.</th>
<th>EXEMPTION</th>
<th>H</th>
<th>M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>252/16</td>
<td>425</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
<td>201/400</td>
<td></td>
<td></td>
<td>EXPLOSIVES 1.3</td>
<td></td>
</tr>
</tbody>
</table>

**Receiving:**  
**RECEIVED:** MAR 2 0 2013  
**Mileage:**

**Signature:**  
**Invoice No.:**

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transport according to the applicable regulations of the Department of Transportation.

Signature:  
**Invoice No.:**

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTRAC — DAY OR NIGHT:**  
**IN THE USA CALL: 800-424-8300**  
**IN CANADA (ERP #2-0040) 800-361-3838**  
**ELSEWHERE CALL (702) 827-3838**

**Permanent Address of Shipper:**  
Explo Systems, Inc.  
1600 Java Road  
Minden, Louisiana 71055  
(318) 382-8700

**Per:**

**DOT Hazardous Material Handling Number:**

**Local Federal Explosives License No. 5-LA-119-20-1A-00057** (Shipper)

I have been offered placentas identifying the shipment as Specified in 49CFR Subpart Part 172. I have received the above goods in apparent good order and condition.

Received By:  
Q CONSIGNEE  
Q CARRIER

By:  
AUTHORIZED RECEIVER  

Date:  

**CONTAINS HAZARDOUS MATERIALS**

019759  
EXP_001393
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, to the usual place of delivery of said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service liable hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof; and (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of the shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect
Prepaid XX
Location No.

Shipper’s No. 2870
Shipping Date 3/19/13
Purchase Order No.

Consignee: Austin Roaders Co.
5020 McCamy Rd
State
East Bernard, TX
Customer No.

Route
Charge Account

Mail or Street Address of Consignee — For purposes of notification only

UN0181, Powder, Smokeless, 1.3C, PG II

#112 2010-1605
EXPLOSIVES 1.3

Monica Kelly
03/20/13

Monica Kelly
WIC 214380

RECEIVED
MAR 20 2013

Actor
AUSTIN ROADERS COMPANY

MILEAGE
Total 252 16 Ft

Packages
252 16 Pd

Gross
Weight 39,800

Net Explosive Weight
35,260

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transport according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-8888 IN CANADA (ERG #2-0040) 800-561-3638 ELSEWHERE CALL (703) 827-3607

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055
(318) 382-8700

Per

Q CONSIGNEE Q CARRIER

I have been offered placards identifying the shipment as specified in 49CFR Subpart Part 172. I have received the above goods in apparent good order and condition.

Authorized Receiver

CONTAINS HAZARDOUS MATERIALS

EXP_001394
# MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LOADING/TRANSPORTATION CONTROL NUMBER: 2670

## SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. CARRIER/GOVERNMENT ORGANIZATION: REUK

3. DATE/TIME OF INSPECTION: 3/19/13

4. LOCATION OF INSPECTION: EYI010 Systems Inc

5. OPERATOR(S) NAME(S): Barnett, Kenneth

6. OPERATOR(S) LICENSE NUMBER(S): R202343009-M0

7. MEDICAL EXAMINER'S CERTIFICATE*: 1-3-15

B. (X if satisfactory at origin)

- a. MILITARY HAZMAT ENDORSEMENT: NO
- b. VALID LEASE*: YES
- c. ROUTE PLAN: NO
- d. DRIVERS' VEHICLE INSPECTION REPORT*: NO
- e. TRUCK/TRACTOR: YES
- f. COPY OF 49 CFR PART 397: NO

## SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Item</th>
<th>Origin (i)</th>
<th>Destination (i)</th>
<th>SAT UNSAT SAT UNSAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. TYPE OF VEHICLE(S): TRACTOR/ TRAILER</td>
<td>DROM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. VEHICLE NUMBER(S): TRAC #6453/ TRAK #980210

12. SPARE ELECTRICAL FUSES: YES

13. VIRGINITY AND OPERATIVE: YES

14. OTHER: YES

15. WARNING APPROVED: YES

16. BIOFUELS: YES

17. OTHER (Specify): YES

18. INSPECTION RESULTS (X one) ACCEPTED: YES

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED: YES

15. REMARKS:

16. INSPECTOR SIGNATURE (Origin): [Signature]

17. INSPECTOR SIGNATURE (Destination): [Signature]

## SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR: NO

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT: NO

20. SEALS APPLIED TO CLOSED VEHICLE, TARPULIN APPLIED ON OPEN EQUIPMENT: NO

21. PROPER PLACARDS APPLIED: NO

22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS: NO

23. COPY OF DD FORM 826 FOR DRIVER: NO

24. SHIPPED UNDER DOT SPECIAL PERMIT 868: NO

25. INSPECTOR SIGNATURE (Origin): [Signature]

26. DRIVER(S) SIGNATURE (Origin): [Signature]

27. INSPECTOR SIGNATURE (Destination): [Signature]

28. DRIVER(S) SIGNATURE (Destination): [Signature]

DD FORM 626, MAR 2007 PREVIOUS EDITION IS OBSOLETE.
# MATERIAL SAFETY DATA SHEET

**PROPELLANT (Wetted)**

**SECTION I - PRODUCT IDENTIFICATION**

PRODUCT NAME: Propellant, Explosive, Solid, Wetted

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>—</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2
FLAMMABILITY 4
PHYSICAL HAZARD [B]
PERSONAL PROTECTION

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX
4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately. INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.

Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.

Autoignition: 383°F (195°C)

Hazardous Combustion Products: Oxides of Carbon

Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.

Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.

Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

**U.N. PROPER SHIPPING NAME AND NUMBER:**
Powder, smokeless, UN0161

**U.N. CLASSIFICATION CODE:** 1.3C

**REFERENCE NUMBER**
EX2010040603

**PRODUCT DESIGNATION/PART NUMBER**
Reclaimed M6 Propellant

**NOTES:** This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

**DATED:** 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) or, excepted, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It being a route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (t) in Uniform Freight Classification in effect on the date hereof, if this is a rail or railroad shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By
Freight Charges: Collect Prepaid

Shipper's No. 2872
Shipping Date 3/20/13
Purchased Order No.

Consigned to
Fed Lic.
Exp. Date

Destination State
Fed Lic.
Exp. Date

County State Lic.
Customer No.

Route

Charge Account of Customer P.O. No. Rel. No.

SHIPPED SHIPPED PROPER SHIPING NAME AND HAZARD CLS.
No. of No. of
PROS UNITS

UN0161, Powder, Smokeless, 1.3C, PG II

RETURNED RETURNED EXEMPTION DOT-E H M
No. of No. of Placards Applied to Relicar or
UNITS UNITS Motor Vehicle

#112

EXPLOSIVES 1.3

Truck No.

Mileage

Total

Packages

Gross

Weight #

Net Explosive Weight

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoic No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300 IN CANADA (ERP #2-0040) 800-661-3536 ELSEWHERE CALL (703) 527-3987

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055
(318) 362-6700

Per

DOT Hazardous Material Handling Number
Local Federal Explosives License No. 5-LA-119-20-1A-00057
(Shipper)

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received by

Consignee Carrier

By

Authorized Receiver

Agent must sign and retain this Shipping Order.
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-20-13

B/L# 2872 TRL 7810021

M-6

IND82H-070166  7 PTS
IND83G-070281  1 PT
IND82A-070101  1 PT
IND85F-070588  2 PTS
IND83C-070235  3 PT
IND83E-070273  4 PTS
IND82H-070169  2 PTS
IND86E-070616  1 PT
IND86E-070617  1 PT
IND84B-070327  1 PT
IND84C-070331  1 PT
IND81G-070061  2 PTS
IND87H-070276  3 PTS
IND83F-070276  1 PT
IND84H-Y70442  2 PTS
IND84D-070429  1 PT
IND88D-070970  1 PT
IND84H-Y70441  2 PTS
IND85K-070598  4 PTS
IND87A-Y70677  1 PT
IND85C-070512  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
**Motor Vehicle Inspection (Transporting Hazardous Materials)**

(Read instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

<table>
<thead>
<tr>
<th>BILL OF LADING/TRANSPORTATION CONTROL NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>2872</td>
</tr>
</tbody>
</table>

**SECTION I - DOCUMENTATION**

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. CARRIER/GOVERNMENT ORGANIZATION: ORIOKE

3. DATE/TIME OF INSPECTION: 3/10/13

4. LOCATION OF INSPECTION: EXPLO SYSTEMS INC.

5. OPERATOR(S) NAME(S): BYRIT, HENNER

6. OPERATOR(S) LICENSE NUMBER(S): 200240301

7. MEDICAL EXAMINER'S CERTIFICATE: 1-3-15

8. (If satisfactory at origin)

   a. MILITARY HAZMAT ENDORSEMENT: YES
   b. VALID LEASE: YES
   c. ROUTE PLAN: YES
   d. ERG OR EQUIVALENT COMMERCIAL: YES
   e. DRIVER'S VEHICLE INSPECTION REPORT: NO
   f. COPY OF 49 CFR PART 397: YES
   g. CSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT: NO

**SECTION II - MECHANICAL INSPECTION**

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>TYPE OF VEHICLE(S)</th>
<th>TRACTOR/ TRAILER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DIZOM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VEHICLE NUMBER(S)</th>
<th>TRAILER # 4367</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7610021</td>
</tr>
</tbody>
</table>

12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>ORIGIN (1)</th>
<th>DESTINATION (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>b. EXHAUST SYSTEM</td>
</tr>
<tr>
<td>c. HORN OPERATIVE</td>
<td>d. BRAKE SYSTEM</td>
</tr>
<tr>
<td>e. STEERING SYSTEM</td>
<td>f. SUSPENSION</td>
</tr>
<tr>
<td>g. WINDSHIELD WIPERS</td>
<td>h. COUPLING DEVICES</td>
</tr>
<tr>
<td>i. MIRRORS</td>
<td>j. CARGO SPACE</td>
</tr>
<tr>
<td>k. WARNING EQUIPMENT</td>
<td>l. TAILGATE DOORS</td>
</tr>
<tr>
<td>m. FIRE EXTINGUISHER</td>
<td>n. TIRES, WHEELS, RIMS</td>
</tr>
<tr>
<td>o. ELECTRICAL WIRING</td>
<td>p. TARPALIN</td>
</tr>
<tr>
<td>q. LIGHTS AND REFLECTORS</td>
<td>r. OTHER (Specify)</td>
</tr>
</tbody>
</table>

13. INSPECTION RESULTS (X one) ACCEPTED: REJECTED

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED: REJECTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

**SECTION III - POST LOADING INSPECTION**

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPALIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DOD FORM 536 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 536 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Driver)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
# MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

**SECTION I - PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted

Technical Information. Phone No.: 318.382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose</td>
<td></td>
<td>87.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(flammable solid)</td>
<td></td>
<td></td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

HAZARD INDEX
4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiber drum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging: UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070617  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 18 JULY 2012  
**Other Information**  
**M6 Propellant**  
**Sample Data**  
**Solvent**  
#1 0.50 g 100 ml ACN

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Area</th>
<th>Conc.</th>
<th>ppm</th>
<th>Time</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>133.9</td>
<td>389.2</td>
<td></td>
<td>0.291</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.365</td>
<td>949.7</td>
<td>0</td>
<td></td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.091</td>
<td>2605.4</td>
<td>22628</td>
<td></td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.514</td>
<td>1047.9</td>
<td>0</td>
<td></td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
<td>1698.8</td>
<td>45.3</td>
<td></td>
<td>0.003</td>
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<td></td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.142</td>
<td>3039.5</td>
<td>80.7</td>
<td></td>
<td>0.003</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.586</td>
<td>6044.7</td>
<td>861.6</td>
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<td>0.057</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.4</td>
<td>1395.6</td>
<td></td>
<td></td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.353

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

<table>
<thead>
<tr>
<th>Analyst</th>
<th>Takisha Dickerson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Signature</td>
<td>Dickerson</td>
</tr>
<tr>
<td>Lab. Supervisor Signature</td>
<td>MJK</td>
</tr>
</tbody>
</table>

| Avg. Tot. Stabilizers | 0.35 % |
| Stable | YES Unstable |

**Comments**  
CATEGORY: A

**Actions to be Taken**

Form #158  
Original Print Date: 07/19/2010  
EXP_001408
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 NOV 2010

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
<td>654.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>717.3</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>7.635</td>
<td>736.3</td>
<td>13022.2</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>11.713</td>
<td>779</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>13.454</td>
<td>462.4</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>15.161</td>
<td>1164.1</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
<td>4078.5</td>
<td>221.2</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Average % Stabilizer for Lot: 0.504

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50%

### Comments
- **Stable:** YES
- Unstable
- **CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**D533 / M6 propellant**

**Date of analysis:** Date: 10 AUGUST 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M6 Propellant Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (s)</th>
<th>Intg. Area 1 (mAU)</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>8.8</td>
<td>112.9</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.343</td>
<td>910.9</td>
<td>0.000</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.034</td>
<td>3858.6</td>
<td>22576</td>
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<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.363</td>
<td>1013.2</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>8.784</td>
<td>1647.3</td>
<td>59.7</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>9.95</td>
<td>2919.6</td>
<td>95.5</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.386</td>
<td>5857.1</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.173</td>
<td>1371.4</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot: 1.339**

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers: 1.34 %**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Actions to be Taken**
# HPLC Propellant Stability Report

## Lot Number: IND85K070598

### D533 / M6 propellant

## Date of analysis:

Date: 25 AUG 2010

## Other Information

**Sample Data**

- **Solvent**: ACN
- **Sample**: #1
- **Weight**: 0.5000 g
- **Volume**: 100 ml

## M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>1423.9</td>
<td>0.972</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>981.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14670.5</td>
<td>0.000</td>
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<tr>
<td>4'NDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
<td>0</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
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<td>0.000</td>
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<tr>
<td>DPA</td>
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<td>4886.9</td>
<td>403.2</td>
<td>0.033</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Average % Stabilizer for Lot

1.005

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

Kisha Dickerson

## Analyst Signature

### Stable

**YES**

### Unstable

**Comments**

**CATEGORY:** A

### Actions to be Taken

---

019777 EXP_001411
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070588  |  **D533 / M6 propellant**

**Date of analysis:**  |  **Date:** 20 Dec 2010

## Other Information

**M6 Propellant**

### Sample Data

- **Solvent**
  - Sample #1: 0.5000 g, 100 ml, ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>2.059</td>
<td>87.1</td>
<td>1411.1</td>
<td>1.620</td>
</tr>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.198</td>
<td>631.9</td>
<td>845.8</td>
<td>0.134</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
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<td>7.699</td>
<td>1074.2</td>
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<td>0.000</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.069</td>
<td>720.1</td>
<td>0</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 1.814

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  |  **Avg. Tot. Stabilizers:** 1.81 %

**Analyst Signature**  |  **Stable:** YES  |  **Unstable:**

**Comments**  |  **CATEGORY:** A

**Lab. Supervisor Signature**  |  **Actions to be Taken**
# HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:** Date: 21 SEP 2010

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4′ DNDPA</td>
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</tr>
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<td>50.0</td>
</tr>
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<td>2,4′ DNDPA</td>
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<tr>
<td>DPA</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
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</table>

Avg. % Stabilizer for Lot 0.495

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers** 0.50 %

**Analyst Signature**  
**Stable** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84B070327  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 Sep 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
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<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
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<tr>
<td></td>
<td>ACN</td>
</tr>
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## M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.889</td>
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<td>1.028</td>
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<tr>
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<td>50.0</td>
<td>3.418</td>
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<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
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<td></td>
<td></td>
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<td>23336</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1566.8</td>
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<td></td>
<td></td>
<td>95.7</td>
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<td>0.006</td>
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<td>10.417</td>
<td>2826.3</td>
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<td>104</td>
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<td>5671.5</td>
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<td>0.047</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

## Average % Stabilizer for Lot

<table>
<thead>
<tr>
<th>Avg. % Stabilizer for Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.086</td>
</tr>
</tbody>
</table>

0.30% or more is Stability Code A  
0.20% – 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.09 %

**Analyst Signature:** Stable YES Unstable

**Comments**

**Lab. Supervisor Signature**

**Actions to be Taken**

**Form #158**

Original Print Date: 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 4 Sep 2012

---

**Other Information**  
**Sample Data**  
*Sample #* | *0.50 g* | *100 ml* | *ACN*  
--- | --- | --- | ---

**M6 Propellant**

---

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Concentration</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.889</td>
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<td>578.6</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
<td>23990</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td>0</td>
</tr>
<tr>
<td>2NDA</td>
<td>50.0</td>
<td>9.134</td>
<td>1566.8</td>
<td>40.6</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.417</td>
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<td>88.7</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td>812.6</td>
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</table>

---

**Avg. % Stabilizer for Lot**  
**1.249**

---

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

---

**Analyst**  
**Mike Kile**

**Avg. Tot. Stabilizers**  
**1.25 %**

---

**Analyst Signature**  
**Stable**  
**YES**  
**Unstable**

**Comments**  
**CATEGORY:**  
**A**

**Lab. Supervisor Signature**

---

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

019781  
EXP_001415
## HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND83C070235  
**D533 / M6 propellant**

**Date of analysis:** 27 JULY 2011

### Sample Data

**Sample #**
- #1: 0.50 g, 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.694</td>
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<td>396</td>
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<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.339</td>
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<td>50.0</td>
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<td>10.693</td>
<td>2956.2</td>
<td>221.1</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
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</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.409

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.41 %

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Actions to be Taken:**
# HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**

**Date of analysis:** Date: 4 April 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent #1</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
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</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.881</td>
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<td>93.7</td>
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<td>26957</td>
<td>26191</td>
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<td>50.0</td>
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<td>75.0</td>
<td>10.895</td>
<td>1475.9</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

| Avg. % Stabilizer for Lot | 0.312 |

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.31 %

**Analyst Signature**

**Stable** YES  
**Unstable**

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82A070101  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 28 June 2012

**Other Information**  
M6 Propellant

**Sample Data**  
Sample #1  
0.50 g  
100 ml  
ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>ppm</th>
<th>Ret</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
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<td>50.0</td>
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<td>0.000</td>
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</table>

### Avg. % Stabilizer for Lot

0.693

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
0.69 %

**Analyst Signature**

**Stable**  
YES  
Unstable

**Comments**

**CATEGORY:**  
A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND81G070061  
**D533 / M6 propellant**

**Date of Analysis:**  
**Date:** 12 JULY 2011

**Other Information**  
M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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<td>0.000</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>9.345</td>
<td>1700.8</td>
<td>167.7</td>
<td>0.010</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.629</td>
<td>3041.2</td>
<td>330.5</td>
<td>0.011</td>
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<tr>
<td>DPA</td>
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<td>5943.4</td>
<td>913.3</td>
<td>0.081</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.034</td>
<td>1443.1</td>
<td>111.8</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.421

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Mike Kile

**Avg. Tot. Stabilizers:** 0.42%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

Form #459  
019785
### Straight Bill of Lading

**RECEIVED**, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any portion of said property over all or any portion of said route to destination, and as to each party at any time interested in any or all of said property, that every service job performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if it is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shippers No.** 2871

---

### Freight Charges

- **Collect**: ____________
- **Prepaid**: y

---

### Consignee Information

- **State**: 
- **Fed Lic.**: 
- **Exp. Date**: 06/01/13

---

### Shipment Details

- **Proper Shipping Name and Hazard Class**: UN0161, Powder, Smokeless, 1.3C, PG II
- **UN No.** 112
- **Explosives 1.3**

---

### Location and Dates

- **RECEIVED**: 11/17/13
- **MAR 21, 2013**

---

### Signature

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT**

IN THE USA CALL 800-424-9300 IN CANADA (ERP 2-00740) 800-551-3636 ELSEWHERE CALL (732) 577-0887 CHEMTREC

**I have been offered placards identifying the shipment as Specified in 49CFR Part 172. I have received the above goods in apparent good order and condition.**

**Received By**: U CONSIGNEE U CARRIER

**By**: AUTHORIZED RECEIVER

---

**CONTAINS HAZARDOUS MATERIALS**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-20-13

B/L# 2871 TRL 6810057

M-6

IND84K-070448  4 PTS
IND848-070327  1 PT
IND82F-070162  1 PT
IND82H-070168  9 PTS
IND83F-070276  12 PTS
IND81D-070019  3 PTS
IND81L-070078  1 PT
IND81L-070072  10 PTS
IND85C-070512  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS  35,280 lbs

LIONEL KOONS

EXPLO SYSTEMS INC
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-20-13

B/L# 2871 TRL 6810057

M-6

IND84K-070448 4 PTS
IND84B-070327 1 PT
IND82F-070162 1 PT
IND82H-070168 9 PTS
IND83F-070276 12 PTS
IND81D-070019 3 PTS
IND81L-070078 1 PT
IND81L-070072 10 PTS
IND85C-070512 1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

(This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.)

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER: 2277

### SECTION 1 - DOCUMENTATION

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. CARRIER/GOVERNMENT ORGANIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRUW</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>3. DATE/TIME OF INSPECTION</th>
</tr>
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<tbody>
<tr>
<td>3/20/13</td>
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</table>

<table>
<thead>
<tr>
<th>4. LOCATION OF INSPECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excalibur Systems, Inc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. OPERATOR(S) NAME(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prodex, Inc.</td>
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<table>
<thead>
<tr>
<th>6. OPERATOR(S) LICENSE NUMBER(S)</th>
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<tbody>
<tr>
<td>320-825-19-0060-0 FL</td>
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<table>
<thead>
<tr>
<th>7. MEDICAL EXAMINER'S CERTIFICATE*</th>
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<tbody>
<tr>
<td>2/25/15</td>
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### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>10. TYPE OF VEHICLE(S)</th>
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</thead>
<tbody>
<tr>
<td>TRUCK/TRACTOR/DROM</td>
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</tbody>
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<table>
<thead>
<tr>
<th>11. VEHICLE NUMBER(S)</th>
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<tbody>
<tr>
<td>TRAX #7306/77305/7</td>
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### PART INSPECTED (X as applicable)

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<tbody>
<tr>
<td>SAT</td>
<td>SAT</td>
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<tr>
<td>UNSAT</td>
<td>UNSAT</td>
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</table>

<table>
<thead>
<tr>
<th>a. SPARE ELECTRICAL FUSES</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>b. HORN OPERATIVE</th>
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<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>c. STEERING SYSTEM</th>
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</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>d. WINDSHIELD/VENTERS</th>
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</thead>
<tbody>
<tr>
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<table>
<thead>
<tr>
<th>e. MIRRORS</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>f. WARNING EQUIPMENT</th>
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<table>
<thead>
<tr>
<th>g. FIRE EXTINGUISHER*</th>
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<thead>
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<th>h. ELECTRICAL WIRING</th>
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<thead>
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<th>i. LIGHTS AND REFLECTORS</th>
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<table>
<thead>
<tr>
<th>j. FUEL SYSTEM*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### INSPECTION RESULTS (X one) ACCEPTED

 rejected

( If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

### SATELLITE MOTOR SURVEILLANCE SYSTEM (X one) ACCEPTED

 rejected

### REMARKS


### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>19. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR</th>
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<thead>
<tr>
<th>20. LOAD PROPERLY SECURED TO PREVENT MOVEMENT</th>
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<table>
<thead>
<tr>
<th>21. PROPER PLACARDS APPLIED</th>
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<table>
<thead>
<tr>
<th>22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS</th>
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<table>
<thead>
<tr>
<th>23. COPY OF DD FORM 626 FOR DRIVER</th>
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<table>
<thead>
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<th>24. SHIPPED UNDER DOT SPECIAL PERMIT 86B</th>
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<table>
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<th>25. INSPECTOR SIGNATURE (Origin)</th>
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<table>
<thead>
<tr>
<th>26. DRIVER(S) SIGNATURE (Origin)</th>
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</table>

### INSPECTOR SIGNATURE (Destination)

<table>
<thead>
<tr>
<th>27. INSPECTOR SIGNATURE (Destination)</th>
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<table>
<thead>
<tr>
<th>28. DRIVER(S) SIGNATURE (Destination)</th>
</tr>
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<tbody>
<tr>
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</table>
SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL ACRIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
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<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL 5 mg/m³</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 5 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td>EPA RQ 10 lbs</td>
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</tr>
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<td></td>
<td></td>
<td></td>
<td>DOT RQ 10 lbs</td>
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<tr>
<td>Diphenylamine</td>
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<td>EPA RQ (none defined)</td>
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<td>DOT RQ (none defined)</td>
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<td>Potassium Sulfate</td>
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<td>OSHA PEL none published</td>
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<tr>
<td></td>
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<td></td>
<td>ACGIH TLV none published</td>
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<td></td>
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<td></td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Nitrocellulose (flammable solid)</td>
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<tr>
<td></td>
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<td>OSHA PEL none published</td>
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<td></td>
<td>ACGIH TLV none published</td>
<td></td>
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<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
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<tr>
<td></td>
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<td></td>
<td>OSHA PEL 10 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 10 mg/m³</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td>EPA RQ 10 lbs</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ 10 lbs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD

PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX

4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV’s.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 - July 13, 2012
Explo Systems, Inc.

Page 2 of 3
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER: EX2010040603
PRODUCT DESIGNATION/PART NUMBER: Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848

Page 1 of 1
# HPLC Propellant Stability Report

## Lot Number: IND85C070512
D533 / M6 propellant

## Date of Analysis:
Date: 10 AUGUST 2012

## Other Information
- **Sample Data**
  - #1
  - 0.50 g
  - 100 ml
  - ACN

## M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td></td>
<td></td>
<td></td>
<td>112.9</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.343</td>
<td>910.9</td>
<td>0</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.034</td>
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<td>22576</td>
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<td>2,4'-DNDPA</td>
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<td>200.0</td>
<td>11.386</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.173</td>
<td>1371.4</td>
<td>0</td>
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</table>

## Avg. % Stabilizer for Lot: 1.339

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst
Takisha Dickerson

## Analyst Signature
Dickerson

## Lab. Supervisor Signature
Dickerson

## Avg. Tot. Stabilizers: 1.34%
Stable

## Comments
CATEGORY: A

## Actions to be Taken

---

Form #158

Original Print Date: 07/19/2010

019795

EXP_001429
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070448  
**D533 / M6 propellant**

**Date of analysis:** 1 Mar 2012

### Sample Data

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Sample #</th>
<th>Conc. Ret</th>
<th>Area 1</th>
<th>Intg.</th>
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<tbody>
<tr>
<td>ACN</td>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
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</tbody>
</table>

### Standards (ERG-006)

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<th>Time</th>
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<th>Intg.</th>
<th>Conc.</th>
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<tbody>
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<td>47.8</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.17</td>
<td>3082.7</td>
<td>91.8</td>
<td>0.003</td>
</tr>
<tr>
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<td>200.0</td>
<td>11.707</td>
<td>6081.6</td>
<td>816.4</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.518</td>
<td>1481.9</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Analytical Results

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0.768</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.768

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**

### Analyst Signature

**Comments**

- **Stable:** YES
- **Unstable:**

**Lab. Supervisor Signature**

**Actions to be Taken**

**Avg. Tot. Stabilizers:** 0.77 %
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number:</th>
<th>IND84B070327</th>
<th>D533 / M6 propellant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of analysis:</td>
<td></td>
<td>Date: 4 Sep 2012</td>
</tr>
</tbody>
</table>

## Other Information
- M8 Propellant
- Sample Data:
  - #1: 0.50 g, 100 ml, ACN

## Standards (ERG-005)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>501.9</td>
<td>1.028</td>
<td></td>
</tr>
<tr>
<td>2,2 DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>23336</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>95.7</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>104</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>673.4</td>
<td>0.047</td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 1.086

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst
- Mike Kile

## Analyst Signature

## Avg. Tot. Stabilizers: 1.09%

## Stable: YES / Unstable

## Comments
- CATEGORY: A

## Lab. Supervisor Signature

## Actions to be Taken

---

Form #158

Original Print Date: 07/19/2010

EXP_001431
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 Sep 2012

**Other Information**  
**M6 Propellant**  
**Sample Data**  
**Solvent**  
#1 0.50 g 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td></td>
<td>578.6</td>
<td>1.186</td>
<td></td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td></td>
<td>23990</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td></td>
<td>40.6</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td></td>
<td>88.7</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td></td>
<td>812.6</td>
<td>0.057</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.249

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.25 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Other Information**  
M6 Propellant

**Sample Data**  
Sample #1  
0.5000 g  
100 ml  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>2540.4</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>31231.4</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>51.5</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>143.2</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
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<tr>
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<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>985.4</td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

2.875

### 0.30% or more is Stability Code A  
### 0.20% - 0.29% is Stability Code C  
### Less than 0.20% is Stability Code D

**Analyst**  
Mike Kile

**Avg. Tot. Stabilizers**  
2.88 %

**Analyst Signature**

**Stable**  
**YES**  
**Unstable**

**Comments**

**CATEGORY:**  
A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010

019799  
EXP_001433
# HPLC Propellant Stability Report

**Lot Number:** IND81L070072  
**D533 / M6 propellant**

**Date of analysis:** Date: 29 MAY 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4',4'DNPA</td>
<td>50.0</td>
<td>0.86 235.9</td>
<td>3.398</td>
<td>913.2</td>
<td>624.2</td>
<td>0.265</td>
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</tr>
<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>5.133 1007.2</td>
<td>7.409</td>
<td>1002.4</td>
<td>37338</td>
<td>0.000</td>
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</tr>
<tr>
<td>2,2'DNDA</td>
<td>50.0</td>
<td>8.917 1612.8</td>
<td>10.112</td>
<td>2882.2</td>
<td>156.8</td>
<td>0.010</td>
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</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.607 5642.3</td>
<td>12.414</td>
<td>1351.4</td>
<td>1100.9</td>
<td>0.078</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.0</td>
<td>3000.0</td>
<td>5000.0</td>
<td>2000.0</td>
<td>1000.0</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.363

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.36 %

**Analyst Signature**

## Stable

**Comments**

<table>
<thead>
<tr>
<th>CATEGORY:</th>
<th>A</th>
</tr>
</thead>
</table>

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**

**Date of analysis:** 29 MAY 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
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</tbody>
</table>

### Standards (ERG-006)

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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.86</td>
<td>235.9</td>
<td>525.7</td>
<td>0.223</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.398</td>
<td>913.2</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.133</td>
<td>1007.2</td>
<td>37577</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.409</td>
<td>1002.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.917</td>
<td>1612.8</td>
<td>186.9</td>
<td>0.012</td>
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<tr>
<td>2NDPA</td>
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<td>10.112</td>
<td>2882.2</td>
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<td>0.010</td>
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<tr>
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<td>917.9</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
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<td>12.414</td>
<td>1351.4</td>
<td>0.000</td>
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</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.309

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**

**Avg. Tot. Stabilizers:** 0.31%

## Analyst Signature

### Stable

**YES**  
Unstable

### Comments

**CATEGORY:** A

### Lab. Supervisor Signature

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to curry to its usual place of delivery of said destination. It on its route, otherwise to deliver another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service jobs performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (t) in Uniform Freight Classification in effect on the date hereof, (t) this is a rail or rail-water shipment, or (c) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assignees.

<table>
<thead>
<tr>
<th>Shipper: Explo Systems, Inc.</th>
<th>Shipper’s No. 2869</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 Java Road</td>
<td></td>
</tr>
<tr>
<td>Minden, LA 71055</td>
<td></td>
</tr>
</tbody>
</table>

At

By R/R - Prepaid

Freight Charges: Collect

Prepaid

Location No. 2431

<table>
<thead>
<tr>
<th>Consigned to</th>
<th>Fed Lic. 5412-103-25-50-40134</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination</td>
<td>Exp. Date 5/1/13</td>
</tr>
<tr>
<td>County</td>
<td>East Camden, AR</td>
</tr>
<tr>
<td>Route</td>
<td>State Lic.</td>
</tr>
<tr>
<td>Charge Account of</td>
<td>Customer No.</td>
</tr>
<tr>
<td></td>
<td>Rel. No.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHIPPED No. of PKGS</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PKGS</th>
<th>RETURNED No. of UNITS</th>
<th>HAZARDOUS MATERIALS</th>
<th>EXEMPTION DATE</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>1</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
<td></td>
<td>EXPLOSIVES 1.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Received By:

Monica Kelly 03/21/13

AUSTIN POWDER COMPANY
EAST CAMDEN PLANT

RECEIVED
MAR 21 2013

Certified that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature: [Signature]

Invoiced No. [Invoice No.]

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055
(318) 382-8700

DOT Hazardous Material Handling Number
Local Federal Explosives License No. 5-LA-119-20-1A-00057
(Shipper)

I have been offered placards identifying the shipment as specified in 49 CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By:
Q CONSIGNEE Q CARRIER

[Signature] [Date 3/19/13]

By AUTHORIZED RECEIVER

019802

CONTAINS HAZARDOUS MATERIALS

EXP_001436
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-19-13

B/L# 2869 TRL 1810004

M-6

IND83F-070274  2 PTS
IND81G-070061  18 PTS
IND81D-070020  3 PTS
IND84G-070326  2 PTS
IND84L-070454  4 PTS
IND81G-070025  2 PTS
IND82J-070122  2 PTS
IND81D-070019  1 PT
IND82D-070110  3 PTS
IND84K-070452  3 PTS
IND88E-070963  1 PT
IND83M-070322  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. CARRIER/GOVERNMENT ORGANIZATION</td>
<td>Reuthe Fuels</td>
</tr>
<tr>
<td>3. DATE/TIME OF INSPECTION</td>
<td>3/14/13</td>
</tr>
<tr>
<td>4. LOCATION OF INSPECTION</td>
<td>Expro Systems Inc.</td>
</tr>
<tr>
<td>5. OPERATOR(S) NAME(S)</td>
<td>Phiney Thomas</td>
</tr>
<tr>
<td>6. OPERATOR(S) LICENSE NUMBER(S)</td>
<td>2320625-440-60 FL</td>
</tr>
</tbody>
</table>

7. MEDICAL EXAMINER'S CERTIFICATE

8. ORIG OR EQUIVALENT COMMERCIAL: YES NO

SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

9. TYPE OF VEHICLE(S)

10. TRACTOR/ TRAILER: Drun

11. VEHICLE NUMBER(S)

12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>YES</td>
</tr>
<tr>
<td>b. HORSE OR OPERATIVE</td>
<td>YES</td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td>YES</td>
</tr>
<tr>
<td>d. WINDSHIELD WIPERS</td>
<td>YES</td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td>YES</td>
</tr>
<tr>
<td>f. WARNING EQUIPMENT</td>
<td>YES</td>
</tr>
<tr>
<td>g. FIRE EXTINGUISHER</td>
<td>YES</td>
</tr>
<tr>
<td>h. ELECTRICAL WIRING</td>
<td>YES</td>
</tr>
<tr>
<td>i. LIGHTS AND REFLECTORS</td>
<td>YES</td>
</tr>
<tr>
<td>j. FUEL SYSTEM</td>
<td>YES</td>
</tr>
</tbody>
</table>

13. INSPECTION RESULTS (X one) ACCEPTED REJECTED

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED REJECTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPOLIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 826 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2
FLAMMABILITY 4
PHYSICAL HAZARD 4
PERSONAL PROTECTION [B]

HAZARD INDEX

<table>
<thead>
<tr>
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<th>Description</th>
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<td>MODERATE HAZARD</td>
</tr>
<tr>
<td>3</td>
<td>SERIOUS HAZARD</td>
</tr>
<tr>
<td>4</td>
<td>SEVERE HAZARD</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION INDEX

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

**U.N. PROPER SHIPPING NAME AND NUMBER:**
Powder, smokeless, UN0161

**U.N. CLASSIFICATION CODE:** 1.3C

**REFERENCE NUMBER** | **PRODUCT DESIGNATION/PART NUMBER**
---|---
EX2010040603 | Reclaimed M6 Propellant

**NOTES:** This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiber drum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

**DATED:** 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND88E070963  
**D533 / M6 propellant**  
**Date of analysis:** Date: 25 AUG 2010

**Other Information**  
**Sample Data**  
**Solvent:** #1 0.5000 g 100 ml ACN

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<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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**Avg. % Stabilizer for Lot: 0.985**

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kiasha Dickerson  
**Avg. Tot. Stabilizers:** 0.98 %  
**Analyst Signature:**  
**Stable:** YES  
**Unstable:** NO  
**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**  
**Actions to be Taken:**

---

**Form #158**  
**Original Print Date:** 07/19/2010  
**EXP_001443**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070452  
**Date of analysis:**  

**D533 / M6 propellant**  
**Date:** 13 AUGUST 2012

## Other Information

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<th>Solvent</th>
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<td></td>
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## Standards (ERG-006)

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## Avg. % Stabilizer for Lot: 0.622

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

<table>
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<tr>
<th>Analyst</th>
<th>Takisha Dickerson</th>
<th>Avg. Tot. Stabilizers</th>
<th>0.62 %</th>
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<tbody>
<tr>
<td>Analyst Signature</td>
<td>Dickerson</td>
<td>Stable</td>
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<table>
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<tr>
<th>Lab. Supervisor Signature</th>
<th>Comments</th>
<th>CATEGORY: A</th>
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</table>

Actions to be Taken
## HPLC PROPELLANT STABILITY REPORT

Lot Number: IND84L070454  |  D533 / M6 propellant
Date of analysis:          |  Date: 4 MAY 2012

### M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
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<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. Area %</th>
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Avg. % Stabilizer for Lot: 0.521

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
Takisha Dickerson  
Analyst Signature

### Stability
Stable: YES  
Unstable:  
Comments: CATEGORY: A

### Actions to be Taken

EXP_001445
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:** Date: 3 MAY 2012

**Other Information**

- M6 Propellant

**Sample Data**

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<th>Conc.</th>
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<th>Intg. Area</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml ACN</td>
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**Standards (ERG-006)**

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<th>Intg. Area</th>
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<td>785.8</td>
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**Avg. % Stabilizer for Lot:** 0.364

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson

**Avg. Tot. Stabilizers** 0.36 %

**Analyst Signature**

**Comments**

**Lab. Supervisor Signature**

**Actions to be Taken**

**CATEGORY:** A
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 JULY 2010

### Other Information

**Sample Data**  
- **Solvent:** 
  - #1: 0.5000 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

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<th>Stabilizer</th>
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<th>Conc. Area</th>
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### Avg. % Stabilizer for Lot

- **0.374**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

- **MARTY**  
- **Avg. Tot. Stabilizers:** 0.37 %

### Analyst Signature

- **Stable:** YES  
- **Unstable:**

### Lab. Supervisor Signature

- **Comments:**  
  - CATEGORY: A

### Actions to be Taken

---

**Form #158**  
**Original Print Date:** 07/19/2010  
**EXP_001447**
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND83F070274

D533 / M6 propellant

## Date of analysis:

Date: 27 JULY 2011

## Other Information

M6 Propellant

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## Standards (ERG-006)

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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Avg. % Stabilizer for Lot

0.590

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

## Analyst

Takisha Dickerson

## Analyst Signature

## Avg. Tot. Stabilizers

0.59 %

## Comments

**CATEGORY:** A

## Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**D533 / M6 propellant**

**Date of analysis:** Date: 27 JULY 2011

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample Data #1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>500 ppm 0.694 Ret 112.8 Intg. 437.7 Conc. 0.388</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>500 ppm 3.477 Ret 942.8 Intg. 0 Conc. 0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>500 ppm 5.339 Ret 77.4 Intg. 22925 Conc. 0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>500 ppm 7.842 Ret 1020.3 Intg. 0 Conc. 0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>500 ppm 9.392 Ret 1634.2 Intg. 119.1 Conc. 0.007</td>
</tr>
<tr>
<td>2NDPA</td>
<td>500 ppm 10.693 Ret 2956.2 Intg. 134.9 Conc. 0.005</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 ppm 12.201 Ret 5630.5 Intg. 218.4 Conc. 0.016</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 ppm 13.103 Ret 1385.2 Intg. 0 Conc. 0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.415

**0.30% or more is Stability Code A**  
**0.20% - 0.29% is Stability Code C**  
**Less than 0.20% is Stability Code D**

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42 %

**Analyst Signature**

**Stable** YES | Unstable

**Comments**  
**CATEGORY:** A  

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001449
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 29 MAY 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-008)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.86</td>
<td>235.9</td>
<td>525.7</td>
<td>0.223</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.398</td>
<td>913.2</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.133</td>
<td>1007.2</td>
<td>37577</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNPA</td>
<td>50.0</td>
<td>7.409</td>
<td>1002.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.917</td>
<td>1612.8</td>
<td>188.9</td>
<td>0.012</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.112</td>
<td>2882.2</td>
<td>282.1</td>
<td>0.010</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.607</td>
<td>5642.3</td>
<td>917.9</td>
<td>0.065</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.414</td>
<td>1351.4</td>
<td></td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Average % Stabilizer for Lot

0.309

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.31 %  

**Analyst Signature**

**Stable** YES | Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 10 Feb 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stabilizer</strong></td>
<td><strong>Conc.</strong></td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>4NDDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>2NDDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 ppm</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 ppm</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: **0.797**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Average Total Stabilizers:** **0.80%**

**Analyst Signature**

**Stable** YES  **Unstable**

**Comments**  
CATEGORY: **A**

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND81G070025  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 OCT 2010

**Other Information**  
Sample Data:  
Solvent: #1 0.5000 g 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>5.024</td>
<td>281.6</td>
<td>50.9</td>
<td>0.018</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>10.59</td>
<td>329</td>
<td>2675.2</td>
<td>0.813</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>12.176</td>
<td>376.1</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNPDA</td>
<td>50.0</td>
<td>12.67</td>
<td>275.3</td>
<td>36.2</td>
<td>0.013</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>13.632</td>
<td>664.1</td>
<td>0</td>
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<td>2NDPA</td>
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<td>14.943</td>
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<td>DPA</td>
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<td>16.114</td>
<td>286</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>19.917</td>
<td>329.9</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.894

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.89 %

**Analyst Signature**  
**Stable** YES  
**Unstable**

**Comments** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND81G070061

## D533 / M6 propellant

### Date of analysis:

Date: 12 JULY 2011

### Other Information

M6 Propellant

### Sample Data

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Int. Area 1</th>
<th>Int. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
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### Standards (ERG-006)

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<th>Conc. ppm</th>
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<th>Int. Area 1</th>
<th>Int. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.71</td>
<td>111</td>
<td>358.1</td>
<td>0.323</td>
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<tr>
<td>2,4-DNDPA</td>
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<td>1001</td>
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<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.325</td>
<td>95</td>
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<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.791</td>
<td>1061.3</td>
<td>83.2</td>
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<td>4NDPA</td>
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<td>9.345</td>
<td>1700.8</td>
<td>167.7</td>
<td>0.010</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.629</td>
<td>3041.2</td>
<td>330.5</td>
<td>0.011</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.152</td>
<td>5943.4</td>
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<td>0.061</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.034</td>
<td>1443.1</td>
<td>111.8</td>
<td>0.000</td>
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</table>

### Avg. % Stabilizer for Lot

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Int. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td></td>
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<td>0.323</td>
</tr>
<tr>
<td></td>
<td>79.1</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>18335</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>83.2</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>167.7</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>330.5</td>
<td>0.011</td>
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<tr>
<td></td>
<td>913.3</td>
<td>0.061</td>
</tr>
<tr>
<td></td>
<td>111.8</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Average % Stabilizer for Lot:

0.421

### Stability Codes:

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

Mike Kile

### Analyst Signature

### Avg. Tot. Stabilizers

0.42 %

### Stable

YES

### Unstable

### Comments

CATEGORY: A

### Actions to be Taken

---

019819

EXP_001453
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth in Uniform Freight Classification in effect on the date hereof. It is a rail or railroad shipment, or if in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of the shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

<table>
<thead>
<tr>
<th>Shipper: Explo Systems, Inc.</th>
<th>1600 Java Road</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minden, LA 71055</td>
</tr>
</tbody>
</table>

At

By

Freight Charges: Collect
Prepaid

Location No.

<table>
<thead>
<tr>
<th>Consignee</th>
<th>Fed Lic.</th>
<th>Exp. Date</th>
</tr>
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<tbody>
<tr>
<td>Austin Power Company</td>
<td>S-AR-103-10-50-SC-0139</td>
<td>6/15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Destination</th>
<th>State</th>
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<tbody>
<tr>
<td>714 GILMORE</td>
<td>NC</td>
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<table>
<thead>
<tr>
<th>County</th>
<th>Customer No.</th>
</tr>
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<tr>
<td>CAMDEN</td>
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<table>
<thead>
<tr>
<th>Route</th>
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</thead>
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<table>
<thead>
<tr>
<th>Charge Account</th>
<th>Customer P.O. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-720-574</td>
<td>4540 S-3002</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHIPPED No. of PIECES</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PIECES</th>
<th>RETURNED No. of UNITS</th>
<th>EMERGENCY RESPONSE PROTOCOL GUIDE NO.</th>
<th>EXEMPTION NOTE</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/16/19 420T</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td>2019040407</td>
<td>EXPLOSIVES 1.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

197 LOAD
R-110 214 544

RECEIVED
MAR 2 1 2013

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT.
IN THE USA CALL 800-424-9300
IN CANADA (ERP #2-0040) 800-561-3636
ELSEWHERE CALL (703) 527-3887.

I have been offered placards identifying the shipment as Specified in 49CFR Subpart of Part 172. I have received the above goods in apparent good order and condition.

Received By

CONSIGNEE CARRIER

DATE

CONTAINS HAZARDOUS MATERIALS

EXP_001454
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-17-13

B/L# 2862 TRL 18477

M-6

IND82E-070115  1 PT
IND86F-070620  3 PTS
IND87H-070847  1 PT
IND84K-070448  7 PTS
IND85K-070598  2 PTS
IND83F-070274  3 PTS
IND84C-070331  4 PTS
IND82M-070274  5 PTS
IND80M-070011  15 PTS
IND80M-070009  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

[Signature]

LIONEL KOONS

EXPLO SYSTEMS INC
### MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

**SECTION 1 - DOCUMENTATION**

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

2. CARRIER/GOVERNMENT ORGANIZATION

3. DATE/TIME OF INSPECTION

4. LOCATION OF INSPECTION

5. OPERATOR(S) NAME(S)

6. OPERATOR(S) LICENSE NUMBER(S)

7. MEDICAL EXAMINER'S CERTIFICATE*

8. (If satisfactory at origin)

   a. MILITARY HAZMAT ENDORSEMENT
   b. VALID LEASE*
   c. ROUTE PLAN

**SECTION II - MECHANICAL INSPECTION**

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE(S)

   a. TRACTOR/TRACTOR/TRACTOR TRAILER

11. VEHICLE NUMBERS:

   TRACTOR # 6936/TRACTOR TRAILER # 18477

12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>ORIGIN (I)</th>
<th>ORIGIN (II)</th>
<th>DESTINATION (I)</th>
<th>DESTINATION (II)</th>
<th>COMMENTS (I)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- a. SPARE ELECTRICAL FUSES
- b. HORN OPERATIVE
- c. STEERING SYSTEM
- d. WINDSHIELD WIPERS
- e. MIRRORS
- f. WARNING EQUIPMENT
- g. FIRE EXTINGUISHER
- h. ELECTRICAL WIRING
- i. LIGHTS AND REFLECTORS
- j. FUEL SYSTEM

13. INSPECTION RESULTS (X one)

   ACCEPTED

   (If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one)

   ACCEPTED

15. REMARKS

   

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

**SECTION III - POST LOADING INSPECTION**

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPAULIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPER/DD FORM 858 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 828 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 888

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted
Technical Information Phone No.: 318.382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
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<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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<tr>
<td>Diphendylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>--</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
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<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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SECTION II - HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>PROPPELLANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH 2 2</td>
</tr>
<tr>
<td>FLAMMABILITY 4</td>
</tr>
<tr>
<td>PHYSICAL HAZARD 4</td>
</tr>
<tr>
<td>PERSONAL PROTECTION [B]</td>
</tr>
</tbody>
</table>

RULES OF ENTRY
- Inhalation: Skin; Ingestion
- Carcinogenicity: None

FIRST AID MEASURES
- EYES: Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician.
- SKIN: Wash with soap and running water. INGESTION: Contact physician immediately.
- INHALATION: Remove to fresh air. Treat irritation symptomatically; call physician.
- Firefighting Measures: Self-oxidizing, deluge with water. Will not be extinguished unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
- Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
- Autoignition: 383°F (195°C)
- Hazardous Combustion Products: Oxides of Carbon
- Accidental Release Measures: SPILL: Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
- Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
- Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
- Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

- Specific Gravity: 1.496
- Evaporation Rate: <1 (Butylacetate = 1)
- Solubility in Water: negligible
- Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 - July 13, 2012
Explo Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85K070598  
**D533 / M6 propellant**

**Date of analysis:** Date: 25 AUG 2010

**Other Information**  
M6 Propellant

## Sample Data  
**Sample #**
- **#1**
  - **Solvent**
    - **ACN**
  - **Sample Weight:** 0.5000 g
  - **Solvent Weight:** 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Sample #</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>N-NitrosoDPA</td>
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## Average % Stabilizer for Lot: 1.005

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.00 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 21 SEP 2010

**Other Information**  
Sample Data  
Solvent #1 0.5000 g 100 ml ACN

### Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc. Ret</th>
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<th>Conc. %</th>
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<td>75.0</td>
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**Avg. % Stabilizer for Lot:** 0.495

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50%

**Analyst Signature**  
**Stable** YES Unstable

**Comments**  
**CATEGORY:** A  
**Actions to be Taken**
# HPLC PROPPELLANT STABILITY REPORT

## Lot Number: IND84K070448

### D533 / M6 propellant

**Date of analysis:** Date: 1 Mar 2012

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### Other Information

**Sample Data**

| Solvent | #1 | 0.50 g | 100 ml | ACN |

---

### Standards (ERG-006)

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<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret ppm</th>
<th>Time</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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<td>0.000</td>
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---

**Avg. % Stabilizer for Lot**

|                     | 0.768 |

---

### Stability Code

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

---

**Analyst**

Takisha Dickerson

**Avg. Tot. Stabilizers**

0.77 %

---

**Analyst Signature**

**Stable**

YES

**Unstable**

---

**Comments**

 CATEGORY: A

---

**Lab. Supervisor Signature**

---

**Actions to be Taken**

---

---

EXP_001464

---

019830
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:** 27 JULY 2011

**Sample Data**  
**Solvent**  
#1  
0.50 g  
100 ml  
ACN

**M6 Propellant**

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
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**Avg. % Stabilizer for Lot:** 0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.59 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070115  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 2 SEPTEMBER 21

**Other Information**  
M6 Propellant

**Sample Data**  
Sample #1  
0.50 g  
100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Integr. Area</th>
<th>Conc. %</th>
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<td>4,4' DNDPA</td>
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## Sampling

**Sample #:**

**Avg. % Stabilizer for Lot:** 0.505

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** KISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**

**Stable**  
**Unstable**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND80M070011  
**D533 / M6 propellant**

**Date of Analysis:** 22 March 2012

### Sample Data

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<th>Intg. Area</th>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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</tr>
</tbody>
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**Solvent:** 0.50 g 100 ml ACN

### Standards (ERG-006)

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<th>Intg. Area 1</th>
<th>Intg. Area</th>
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<tbody>
<tr>
<td>4,4’-DNDA</td>
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<td>0.897</td>
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<td>10.019</td>
<td>1528.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.357</td>
<td>5392.9</td>
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<tr>
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<td>75.0</td>
<td>12.286</td>
<td>1332.2</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot 0.334

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.33 %

**Analyst Signature**

**Comments:** Categor: A

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND80M070009  D533 / M6 propellant
Date of analysis:  Date: 20 SEP 2010

Other Information
Sample Data
D6 Propellant
Solvent
#1  0.5000 g  100 ml  ACN

Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Time</td>
<td>Area</td>
<td>Area</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>%</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.113</td>
<td>241.3</td>
<td></td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>4.997</td>
<td>1506.8</td>
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</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.178</td>
<td>3394.6</td>
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</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>10.355</td>
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</tr>
<tr>
<td>4NDPA</td>
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<td>2NDPA</td>
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<td>13.451</td>
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<td>DPA</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>16.02</td>
<td>1339.6</td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot 0.670

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst  Kisha Dickerson  Avg. Tot. Stabilizers  0.67 %
Analyst Signature

Stable  YES  Unstable

Comments
CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) contained, and destined as indicated below, which said carrier (the word carrier being construed throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service herein performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (i) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect Prepaid Location No. 1607

Shippers No. 2863
Shipping Date 3/17/13
Purchase Order No.

(Please Address of Consignee — For purposes of notification only)
Consignee: Austin Powder Co.
720 E. Boulevard (PO Box 255)
State.

Destination: EAST CAMDEN AR

County: EAST CAMDEN AR

Charge Account No.: 1974-0504 14-302

Customer P.O. No.: Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>EXEMPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Pkg.</td>
<td>No. of Units</td>
<td>Name</td>
<td>Hazard</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>250/14/4207</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300 IN CANADA (ERP #-0004) 800-561-3536 ELSEWHERE CALL (703) 527-9880

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received by: John E. Davis
Date: 3/17-19

By: John E. Davis
Date: 3/17-19

019835
EXP_001469
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-17-13

B/L# 2863 TRL 1810031

M-6

IND82E-070115 5 PT
IND86F-070620 2 PTS
IND82E-070434 2 PTS
IND85E-070522 1 PT
IND87B-070678 1 PT
IND89F-071043 7 PTS
IND88B-070509 2 PTS
IND82H-070166 1 PT
IND88H-070966 1 PT
IND85C-070512 4 PTS
IND81K-070070 1 PT
IND89L-Y70298 1 PT
IND87A-Y70677 1 PT
IND83F-070276 1 PT
IND87H-070720 1 PT
IND88J-070970 1 PT
IND87J-070849 4 PTS
IND84H-070443 1 PT
IND82H-070166 5 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
# Motor Vehicle Inspection (Transporting Hazardous Materials)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

## Section 1 - Documentation

<table>
<thead>
<tr>
<th>Field</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. CARRIER/GOVERNMENT ORGANIZATION</td>
<td>PRKR</td>
<td></td>
</tr>
<tr>
<td>3. DATE/TIME OF INSPECTION</td>
<td>3/17/13</td>
<td></td>
</tr>
<tr>
<td>4. LOCATION OF INSPECTION</td>
<td>C Y N D O S Y S T E M S L L C</td>
<td></td>
</tr>
<tr>
<td>5. OPERATOR(S) NAME(S)</td>
<td>Pepeo Truck</td>
<td></td>
</tr>
<tr>
<td>6. OPERATOR(S) LICENSE NUMBER(S)</td>
<td>03206254500067</td>
<td></td>
</tr>
<tr>
<td>7. MEDICAL EXAMINER'S CERTIFICATE</td>
<td>2/25/13</td>
<td></td>
</tr>
</tbody>
</table>

# Section 2 - Mechanical Inspection

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Field</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. TYPE OF VEHICLE(S)</td>
<td>TRACTOR/ TRACTOR/ DRUM</td>
<td></td>
</tr>
<tr>
<td>11. VEHICLE NUMBER(S)</td>
<td>39027017</td>
<td></td>
</tr>
</tbody>
</table>

## Section 3 - Preloading Inspection

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on incoming loaded equipment.

<table>
<thead>
<tr>
<th>Field</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. SEALS APPLIED TO CLOSED VEHICLE; TARPULIN APPLIED ON OPEN EQUIPMENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. PROPER PLACARDS APPLIED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. SHIPPING PAPERS/DO FORM 868 FOR GOVERNMENT VEHICLE SHIPMENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. COPY OF DD FORM 820 FOR DRIVER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. SHIPPED UNDER DOT SPECIAL PERMIT 868</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. INSPECTOR SIGNATURE (Origin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. INSPECTOR SIGNATURE (Destination)</td>
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<td></td>
</tr>
</tbody>
</table>

# Remarks

**Signature**

## Section III - Post Loading Inspection

**Signature**

<table>
<thead>
<tr>
<th>Field</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. DRIVER(S) SIGNATURE (Origin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. DRIVER(S) SIGNATURE (Destination)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# MATERIAL SAFETY DATA SHEET

**PROPELLANT (Wetted)**

**SECTION I - PRODUCT IDENTIFICATION**

PRODUCT NAME: Propellant, Explosive, Solid, Wetted
Technical Information Phone No.: 318.382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV (if defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (if defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (if defined)</td>
</tr>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 10 mg/m³</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>EPA RQ (none defined)</td>
</tr>
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<td></td>
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<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
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<td>2.00</td>
<td>OSHA PEL none published</td>
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<td></td>
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<td>EPA RQ (none defined)</td>
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<tr>
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<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>--</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV none published</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
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<td></td>
<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Dinitrotoluene</td>
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<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

DIELECTRIC 4

PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX

4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 - July 13, 2012
Expo Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.  
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)  
Hazard Class: 1.3C  
UN No. UN0161  
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
## HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number: IND88H070966</th>
<th>D533 / M6 propellant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of analysis:</td>
<td>Date: 29 JULY 2011</td>
</tr>
</tbody>
</table>

### Sample Data
- **Solvent**: ACN
- **Sample**: #1
- **Weight**: 0.50 g
- **Volume**: 100 ml

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.642</td>
<td>125.1</td>
<td>600.3</td>
<td>0.480</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.455</td>
<td>992.3</td>
<td>0</td>
<td>0.000</td>
</tr>
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<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.274</td>
<td>125.3</td>
<td>27328</td>
<td>0.000</td>
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<tr>
<td>2,4'-DNDPA</td>
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<td>7.702</td>
<td>1067.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
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<td>88.8</td>
<td>0.005</td>
</tr>
<tr>
<td>2NDPA</td>
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<td>10.547</td>
<td>3070.1</td>
<td>85.2</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.08</td>
<td>5796.8</td>
<td>694.6</td>
<td>0.048</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.966</td>
<td>1456.1</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Average % Stabilizer for Lot

0.536

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

### Analyst Information
- **Analyst**: Kisha Dickerson
- **Analyst Signature**
- **Avg. Tot. Stabilizers**: 0.54 %
- **Stable**: YES
- **Unstable**:
- **Comments**: CATEGORY: A
- **Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND87H070720  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 18 NOV 2011

**Sample Data**  
Solvent: #1 0.50 g 100 ml ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc.</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: **0.398**

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** **0.40 %**

**Analyst Signature**  
**Stable** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND87BY70678

Date of analysis: Date: 19 OCTOBER 2011

Other Information
M6 Propellant

Sample Data
Sample #
Solvent #1 0.50 g 100 ml ACN

Standards (ERG-008)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.86</td>
<td>108.3</td>
<td>465.3</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.439</td>
<td>927.1</td>
<td>0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.254</td>
<td>682.7</td>
<td>0</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.643</td>
<td>998.4</td>
<td>0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.185</td>
<td>1612.6</td>
<td>50</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.427</td>
<td>2895.4</td>
<td>343.7</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.954</td>
<td>5562.6</td>
<td>261.2</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.798</td>
<td>1360.9</td>
<td>0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.463

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: TAKISHA DICKERSON
Avg. Tot. Stabilizers: 0.46%

stable: YES Unstable

Comments: CATEGORY: A

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**D533 / M6 propellant**

**Date of analysis:** Date: 10 AUGUST 2012

**Other Information**  
**Sample Data**  
Sample #1: 0.50 g, 100 ml, ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Sample # Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>8.8</td>
<td>112.9</td>
<td>1.283</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.343</td>
<td>910.9</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.034</td>
<td>3858.6</td>
<td>22576</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.363</td>
<td>1013.2</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.784</td>
<td>1647.3</td>
<td>59.7</td>
<td>0.004</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.95</td>
<td>2919.6</td>
<td>95.5</td>
<td>0.003</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.386</td>
<td>5857.1</td>
<td>714.1</td>
<td>0.049</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.173</td>
<td>1371.4</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

| Avg. % Stabilizer for Lot | 1.339 |

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 1.34 %  
**Stable:** YES  
**Unstable:**

**Comments:**
- CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 Sep 2012

### Other Information
- **Sample Data:**
  - #1: 0.50 g, 100 ml, ACN
- **M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.889</td>
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<td>578.6</td>
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<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
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<td>0.000</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
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<td>23990</td>
<td>0.000</td>
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<tr>
<td>2,4'-DNPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td></td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
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<td>40.6</td>
<td>0.003</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
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<td>88.7</td>
<td>0.003</td>
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</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td></td>
<td>812.6</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
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<td>0</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 1.249

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Analyzer Signature**

**Avg. Tot. Stabilizers:** 1.25 %  
**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A  
**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001481
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070115  
**D533 / M6 propellant**

**Date of analysis:** Date: 2 SEPTEMBER 21

## Other Information

- **Sample Data**  
  - Sample #1  
  - 0.50 g  
  - 100 ml  
  - ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.631</td>
<td>119.7</td>
<td>513.1</td>
<td>0.429</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.438</td>
<td>956.4</td>
<td>17.4</td>
<td>0.002</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.235</td>
<td>1727.8</td>
<td>25268</td>
<td>0.000</td>
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<tr>
<td>2,4'-DNDPA</td>
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<td>1043.1</td>
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<td>0.000</td>
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<tr>
<td>4NDPA</td>
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<td>9.163</td>
<td>1669.9</td>
<td>77.7</td>
<td>0.005</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.427</td>
<td>3002.4</td>
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<td>0.005</td>
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<td>0.000</td>
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</table>

## Avg. % Stabilizer for Lot

0.505

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**KISHA DICKERSON**  
**Avg. Tot. Stabilizers** 0.50 %

## Analyst Signature

Stable YES Unstable

## Comments

CATEGORY: A

## Lab. Supervisor Signature

Actions to be Taken
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown, condition as described is indicated below), which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to r

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Freight Charges: Collect
Prepaid

Shipper's No. 2860
Shipping Date 3/14/13
Purchase Order No.

By

Location No. 2420/1407

Consignee: Austin Powder Co.
726-14 Barry Rd
East Camden, LA

Fed Lic. 5-M12-103-20-55-00137
Exp. Date 5/1/15

Customer No.

Charge Account 1470-674 6560

Customer P.O. No.

Placards Applied to Railcar or Motor Vehicle

EXPLOSIVES 1.3

--- Table ---

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EMERGENCY RESPONSE PROCEDURE NUMBER</th>
<th>EXEMPTION DATE</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>252/14</td>
<td>42 PT</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td>2010/06/05 A</td>
<td>EXPLOSIVES 1.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

--- Details ---

Truck No.: 7306
Trailer No.: 17749

Net Explosive Weight: 35.28

--- Signatures ---

Signature of Shippers: [Signature]

Signature of Receiving Carrier: [Signature]

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9500 IN CANADA (ERF #2-0040) 800-561-3635 ELSEWHERE CALL (703) 527-3899

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.
AUSTIN POWDER PACKING LIST

SHIPMENT DATE

B/L# 2860 TRL 17749

M-6

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>IND84C-070331</td>
<td>8 PTS</td>
</tr>
<tr>
<td>IND81D-070019</td>
<td>1 PT</td>
</tr>
<tr>
<td>IND82A-070101</td>
<td>2 PTS</td>
</tr>
<tr>
<td>IND83F-070274</td>
<td>6 PTS</td>
</tr>
<tr>
<td>IND84G-070326</td>
<td>3 PTS</td>
</tr>
<tr>
<td>IND86M-070673</td>
<td>3 PTS</td>
</tr>
<tr>
<td>IND81F-070024</td>
<td>1 PT</td>
</tr>
<tr>
<td>IND81B-070013</td>
<td>2 PTS</td>
</tr>
<tr>
<td>IND81E-070022</td>
<td>2 PTS</td>
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<tr>
<td>IND86F-070620</td>
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<tr>
<td>IND81D-070020</td>
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<tr>
<td>IND82E-070114</td>
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<td>IND88D-070716</td>
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<td>IND88H-070966</td>
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<td>IND82H-070166</td>
<td>2 PTS</td>
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<tr>
<td>IND88A-070891</td>
<td>1 PT</td>
</tr>
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</table>

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, end destined as indicated below.
which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination, and to not deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof,
if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By AUDR LAMM

Freight Charges: Collect Prepaid X X

Location No. 2470/1007

Shipper's No. 2860
Shipping Date 5/14/13
Purchase Order No.

(Mail or Street Address of Consignee — For purposes of notification only)
Consignee: AUSTIN POWDER CO.
728 W SHAYNN RD
State

Dest State Li. Exp. Date 5/11/15

County

Route

Charge Account of 577-574-8560 Customer P.O. No. Rel. No.

Placards Applied to Railcar or Motor Vehicle

Placard No. 112 EXPLOSIVES 1.3

Truck No. 7306
Trailer No. 17749

Gross Weight 

Net Explosive Weight

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL, 800-424-9300 IN CANADA (ERP #2-0049) 800-561-3636 ELSEWHERE CALL (703) 597-3887

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055
(318) 362-8700

Per

DOT Hazardous Material Handling Number
Local Federal Explosives License No. 5-LA-119-20-1A-00057
(Reference)

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By Q CONSIGNEE Q CARRIER

Date 3/14/13

By AUTHORIZED RECEIVER

EXP_001485
**SECTION I - PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
**Technical Information Phone No.:** 318.382.8700  

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL ACGIH TLV EPA RQ (if defined) DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³ ACGIH TLV 5 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>--</td>
<td>87.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
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<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2
FLAMMABILITY 4
PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX

4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

A  B  C  D  E  F  G  H  I  J  K  L  M  N  O  P  Q

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel.
Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 Subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV’s.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fc@explo.com
# HPLC PROPELLANT STABILITY REPORT

- **Lot Number:** IND88H070966
- **D533 / M6 propellant**
- **Date of analysis:** Date: 29 JULY 2011

**Other Information**
- Sample Data
  - #1
  - 0.50 g
  - 100 ml
  - ACN

**Solvent**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm Time</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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</thead>
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<tr>
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**Avg. % Stabilizer for Lot:** 0.536

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst
- Kisha Dickerson

### Analyst Signature
- Stable: YES
- Unstable: 

### Comments
- CATEGORY: A

### Actions to be Taken
### HPLC PROPELLANT STABILITY REPORT

#### Lot Number: IND88A070891

**D533 / M6 propellant**

**Date of analysis:** Date: 10 NOV 2011

### Other Information

**Sample Data**

- **Solvent** ACN
- **Sample #**
  - #1
  - 0.50 g
  - 100 ml

### Standards (ERG-006)

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<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
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#### Analyst

**TAKISHA DICKERSON**

**Avg. Tot. Stabilizers** 0.82 %

**Analyst Signature**

- Stable: YES
- Unstable: NO

**Comments**

- CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

019857 

EXP_001491
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**

**Date of analysis:** Date: 7 FEB 2012

## Other Information

**Sample Data**  
M6 Propellant  

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<td>ACN</td>
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## Standards (ERG-006)

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### Average % Stabilizer for Lot
0.965

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.97%  
**Stable** YES | **Unstable**

**Lab. Supervisor Signature**  
**Comments**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 3 MAY 2012

**Other Information**

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<tr>
<td></td>
<td>100 ml</td>
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<td>ACN</td>
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**M6 Propellant**

**Standards (ERG-006)**

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<th>Ret Time</th>
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**Avg. % Stabilizer for Lot:** 0.364

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.36 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 21 SEP 2010

### Sample Data

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### Solvent

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### Standards (ERG-006)

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| Concentration % Stabilizer for Lot | 0.495 |

### Analyst

**Kisha Dickerson**  
**Avg. Tot. Stabilizers:** 0.50 %  
**Stable:** YES  
**Unstable:**  
**Comments:** CATEGORY: A  
**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:** Date: 27 JULY 2011

**Other Information**

M6 Propellant

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<td>100 ml</td>
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## Standards (ERG-006)

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**Avg. % Stabilizer for Lot:** 0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.59 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND82E070114
### D533 / M6 propellant

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## Other Information

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### M6 Propellant Standards (ERG-006)

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**Avg. % Stabilizer for Lot:** 0.367

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

<table>
<thead>
<tr>
<th>TAKISHA DICKERSON</th>
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### Analyst Signature

Stable YES Unstable

### Comments

CATEGORY: A

### Lab. Supervisor Signature

Actions to be Taken
# HPLC Propellant Stability Report

**Lot Number:** IND82A070101  
**D533 / M6 propellant**

**Date of analysis:** Date: 28 June 2012

### Other Information
- **Sample Data**
  - #1
  - 0.50 g
  - 100 ml
  - ACN

### Standards (ERG-006)

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### Average % Stabilizer for Lot

0.693

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
0.69 %

**Analyst Signature**

**Stable**  
YES

**Unstable**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070020  
**D533 / M6 propellant**

**Date of analysis:** Date: 10 Feb 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

**M6 Propellant**

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Sample # Intg.</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.868</td>
<td>53.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.292</td>
<td>916.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.936</td>
<td>839.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>6.943</td>
<td>1003.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.309</td>
<td>1616.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.362</td>
<td>2912</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>10.749</td>
<td>5497.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.362</td>
<td>1264.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.797

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.80 %

**Analyst Signature**

**Stable** YES Unstable

**Comments** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**DS33 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

**Other Information**  
**M6 Propellant**

**Sample Data**  
<table>
<thead>
<tr>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Inlg. Area 1</th>
<th>Conc. Inlg.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,4' DNDPA</td>
<td>50.0</td>
<td>4.884</td>
<td>715.1</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
<td>17278.9</td>
<td>2.174</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>11.213</td>
<td>1155.8</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.899</td>
<td>750.7</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.536</td>
<td>1565</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>13.934</td>
<td>4151.3</td>
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<td>0.000</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>451.1</td>
<td>0.063</td>
</tr>
</tbody>
</table>

## Avg. % Stabilizer for Lot
2.237

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
2.24 %

**Analyst Signature**  
**Stable** YES Unstable

**Lab. Supervisor Signature**  
**Comments**  
CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81F070024  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 9 DEC 2011

## Other Information

**Propellant:** M6 Propellant

## Sample Data

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.748</td>
<td>166.8</td>
<td>892.3</td>
<td>0.535</td>
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<td>2,4-DNPA</td>
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<td>3.333</td>
<td>991.5</td>
<td>0</td>
<td>0.000</td>
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<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.039</td>
<td>624.7</td>
<td>22530</td>
<td>0.000</td>
</tr>
<tr>
<td>4’ DNDPA</td>
<td>50.0</td>
<td>7.221</td>
<td>1076.5</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2NDPA</td>
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<td>8.681</td>
<td>1747.7</td>
<td>46.9</td>
<td>0.003</td>
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<tr>
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<td>11.276</td>
<td>5985.4</td>
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<tr>
<td>N-NitroDPA</td>
<td>75.0</td>
<td>12.035</td>
<td>1482.1</td>
<td>604.1</td>
<td>0.040</td>
</tr>
</tbody>
</table>

## Avg. % Stabilizer for Lot

0.582

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.58 %

**Analyst Signature**

**Stable**  
YES

**Unstable**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND81D070019  
**D533 / M6 propellant**  
**Date of analysis:** Date: 29 MAY 2012  
**Other Information:** M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stabilizer</strong></td>
<td><strong>Conc. Ret Intg.</strong></td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.309

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.31 %  
**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# Straight Bill of Lading

**CONTAINS HAZARDOUS MATERIALS**

**STRAIGHT BILL OF LADING**

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), consigned, and destined as indicated below, is to be delivered at the place of delivery of said destination, it on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed that each of or any of said property, that every service be performed are to be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (i) in Uniform Freight Classification in effect on the date hereof, and (ii) in the sanitary motor carrier classification of tariff. If this is a motor carrier shipment, the shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this hipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shopper:** Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

**Freight Charges:** Collect

**Prepaid No.**

**Location No.**

- **Shipper’s No.** 2854
- **Shipping Date** 5/14/13
- **Purchase Order No.**

**Consigned to:**
- **Fed Lic.** 5742-103-3-10-52-29-37
- **Exp. Date** 5/1/13

**Destination:**
- **State Lic.**
- **Exp. Date**

**County:**

**Route:**

**Charge Account:** 1-570-574-0580 9 302

**Customer P.O. No.**

**Rel. No.**

<table>
<thead>
<tr>
<th>SHIPPED No. of PKGS</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PKGS</th>
<th>RETURNED No. of UNITS</th>
<th>EMERGENCY RESPONSE PROCEDURE GUIDELINES</th>
<th>EXEMPTION</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>1</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
<td>X EXPLOSIVES 1.3</td>
<td>043C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>761032</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>89.57</td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Ignature:**

**Invoice No.**

**Address of Shipper:**
- **Explo Systems, Inc.**
  1600 Java Road
  Minden, LA 71055

**Address of Consignee:**
- **P.O. Box 901**
  Austin, TX 78760

**Authorized Receiving Party:**
- **Q CARRIER**
- **Q CONSIGNEE**

**Federal Explosives License No.**
- **115-20-1A-00057**

**Date:**
- **3-14-13**

**Received by:**
- **Signature**

**Authorized Receiver:**
- **Signature**

**Date:**
- **Signature**

I have been offered placards identifying the shipment as specified in 49 CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

**Signature**

019868

EXP_001502
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 12 MAR 2013

B/L# 2854 TRL 7810132

M-6

IND82D-070113  14 PTS
IND81D-070015  2 PTS
IND82E-070114  8 PTS
IND85K-070598  2 PTS
IND86M-070673  12 PTS
IND82K-070178  1 PT
IND81G-070061  2 PTS
IND82K-070173  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35380 LBS

LIONEL KOONS

EXPLO SYSTEMS INC.
# MATERIAL SAFETY DATA SHEET

## PROPELLANT (Wetted)

### SECTION I - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
**Technical Information Phone No.:** 318 382 8700  
For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL ACIGH TLV EPA RQ (if defined) DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m&lt;sup&gt;3&lt;/sup&gt; ACIGH TLV 5 mg/m&lt;sup&gt;3&lt;/sup&gt; EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m&lt;sup&gt;3&lt;/sup&gt; ACIGH TLV 10 mg/m&lt;sup&gt;3&lt;/sup&gt; EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published ACIGH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published ACIGH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m&lt;sup&gt;3&lt;/sup&gt; ACIGH TLV 10 mg/m&lt;sup&gt;3&lt;/sup&gt; EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PERSONAL PROTECTION [B]

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.

Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.

Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496

Evaporation Rate: <1 (Butylacetate = 1)

Solubility in Water: negligible


Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explo.com
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry to the usual place of delivery of said destination, If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service lobe performed by carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof. It is a rail or rail-water shipment, or (2) in the applicable motor carrier classification of tariff it this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

<table>
<thead>
<tr>
<th>Shipped No. of Pallets</th>
<th>Shipped No. of Units</th>
<th>Proper Shipping Name and Hazard Class</th>
<th>Returned No. of Pallets</th>
<th>Returned No. of Units</th>
<th>Exemption Code</th>
<th>H M</th>
<th>Placards Applied to Railroad or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>257/65</td>
<td>40</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>31</td>
<td>9</td>
<td>#112</td>
<td>M  X</td>
<td>EXPLOSIVES 1.3</td>
</tr>
</tbody>
</table>

This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature: [Signature]  
Invoice No.: [Invoice No.]

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMREC—DAY OR NIGHT  
IN THE USA CALL 800-424-9300 IN CANADA (ERG 9-0409) 800-561-3636 ELSEWHERE CALL (703) 527-3887  
I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received by [Signature]  
Date 3-4-3

Ref [Ref]

DOT Hazardous Material Handling Number [DOT Number]

Local Federal Exploids License No. [License Number] (Shipper)
### MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

(Read instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

<table>
<thead>
<tr>
<th></th>
<th>BILL OF LADING/TRANSPORTATION CONTROL NUMBER</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2854</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 1 - DOCUMENTATION

<table>
<thead>
<tr>
<th></th>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>CARRIER/GOVERNMENT ORGANIZATION</td>
<td>Reck</td>
</tr>
<tr>
<td>3.</td>
<td>DATE/TIME OF INSPECTION</td>
<td>3/12/13</td>
</tr>
<tr>
<td>4.</td>
<td>LOCATION OF INSPECTION</td>
<td>Explo Systems Inc.</td>
</tr>
<tr>
<td>5.</td>
<td>OPERATOR(S) NAME(S)</td>
<td>Acker, Heather</td>
</tr>
<tr>
<td>6.</td>
<td>OPERATOR(S) LICENSE NUMBER(S)</td>
<td>K2023Y30508 MW</td>
</tr>
</tbody>
</table>

### MEDICAL EXAMINER'S CERTIFICATE

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>1/3/15</td>
</tr>
</tbody>
</table>

### B. (If satisfactory at origin)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>MILITARY HAZMAT ENDORSEMENT</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>VALID LEASE</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>ROUTE PLAN</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>TYPE OF VEHICLE(S)</td>
<td>TRACTOR/TRACTOR-DRIVER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>VEHICLE NUMBER(S)</td>
<td>TRAC #6436 TRU #7610132</td>
<td></td>
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<td>11.</td>
<td>VEHICLE NUMBER(S)</td>
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<tbody>
<tr>
<td>12.</td>
<td>PART INSPECTED (X as applicable)</td>
<td></td>
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<tr>
<td>a.</td>
<td>SPARE ELECTRICAL FUSES</td>
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<td>b.</td>
<td>HORN OPERATIVE</td>
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<td>c.</td>
<td>STEERING SYSTEM</td>
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<td>d.</td>
<td>WINDSHIELD/WIPERS</td>
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<td>e.</td>
<td>MIRRORS</td>
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<td>f.</td>
<td>WARNING EQUIPMENT</td>
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<td>g.</td>
<td>FIRE ExTINGUISHERS*</td>
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<td>h.</td>
<td>ELECTRICAL WIRING</td>
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<tr>
<td>i.</td>
<td>LIGHTS AND REFLECTORS</td>
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<td>j.</td>
<td>FUEL SYSTEM*</td>
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<td>13.</td>
<td>INSPECTION RESULTS (X one)</td>
<td>ACCEPTED</td>
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<td>14.</td>
<td>SATELLITE MOTOR SURVEILLANCE SYSTEM (X one)</td>
<td>ACCEPTED</td>
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### REMARKS

<p>| | |</p>
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<tr>
<td>15.</td>
<td>REMARKS</td>
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</table>

### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tr>
<td>16.</td>
<td>INSPECTOR SIGNATURE (Origin)</td>
<td></td>
<td></td>
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<tr>
<td>17.</td>
<td>INSPECTOR SIGNATURE (Destination)</td>
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</tbody>
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<td>25.</td>
<td>INSPECTOR SIGNATURE (Origin)</td>
<td></td>
<td></td>
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<td>26.</td>
<td>DRIVER(S) SIGNATURE (Origin)</td>
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<td></td>
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<td>27.</td>
<td>INSPECTOR SIGNATURE (Destination)</td>
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<td>28.</td>
<td>DRIVER(S) SIGNATURE (Destination)</td>
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</table>
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**  
**Date of analysis:**  
**Sample Data**  
**Solvent**  
**M8 Propellant**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>50.1</td>
<td></td>
<td>452.6</td>
<td>0.903</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.336</td>
<td>893.6</td>
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<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.03</td>
<td>726.8</td>
<td></td>
<td>22299</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.182</td>
<td>1225.5</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.642</td>
<td>1532.1</td>
<td></td>
<td>67.5</td>
<td>0.004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.759</td>
<td>2784.7</td>
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<td>120.3</td>
<td>0.004</td>
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</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.235</td>
<td>5480.9</td>
<td></td>
<td>727.3</td>
<td>0.053</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.979</td>
<td>1363.1</td>
<td></td>
<td>0</td>
<td>0.000</td>
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<td></td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.965

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.97 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**  
**CATEGORY:** A

**Actions to be Taken**

---

Original Print Date: 07/19/2010  
EXP_001510
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85K070598  
**D533 / M6 propellant**

**Date of analysis:** Date: 25 AUG 2010

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
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</tbody>
</table>

**M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-DNIPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>1423.9</td>
<td>0.972</td>
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<td>2,4-DNIPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2,2’-DNIPA</td>
<td>60.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14670.5</td>
<td>0.000</td>
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<td>2,4’-DNIPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
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<tr>
<td>2NDPA</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4886.9</td>
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<td>0.033</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td>0</td>
<td>0.000</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot:** 1.005

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.00%

**Analyst Signature**

**Stable**  
**Unstable**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070173  
**Sample:** M6 Propellant  
**Solvent:** ACN  
**Date of analysis:** 21 Apr 2011

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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<tbody>
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<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>4.152</td>
<td>1065.2</td>
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<tr>
<td>2,4-DNDPA</td>
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<td>1128.5</td>
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<td>2,2’ DNDPA</td>
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<td>11.075</td>
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<tr>
<td>2,4’ DNDPA</td>
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<td>11.744</td>
<td>1566.2</td>
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<td>254</td>
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<td>2NDA</td>
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<td>200.0</td>
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<td>N-NitrosoDPA</td>
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<td>18.991</td>
<td>2304.9</td>
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<td>398.1</td>
<td>0.000</td>
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- Avg. % Stabilizer for Lot: **3.033**
- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson

**Avg. Tot Stabilizers:** 3.03 %

**Analyst Signature**

**Stable** YES **Unstable**

**Lab. Supervisor Signature**

**Comments**

**CATEGORY:** A

**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070114  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 22 NOV 2011

**Other Information**  
M6 Propellant

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<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>ACN</td>
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<tr>
<td>0.50 g</td>
<td>100 ml</td>
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</table>

## Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>50.0</td>
<td>5.127</td>
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<tr>
<td>2,4' DNDPA</td>
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<td>1001.4</td>
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<tr>
<td>4NDPA</td>
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<td>0.004</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.053</td>
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<td>75.0</td>
<td>12.383</td>
<td>1361.9</td>
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<td>0.000</td>
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</tbody>
</table>

| Avg. % Stabilizer for Lot | 0.367 |

**0.30% or more is Stability Code A**  
**0.20% - 0.29% is Stability Code C**  
**Less than 0.20% is Stability Code D**

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.37%

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82D070113  D533 / M6 propellant
Date of analysis:       Date: 6 JAN 2012

Other Information
Sample Data
#1  0.50 g  100 ml  ACN
Solvent
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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<tbody>
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<td>Conc. Ret</td>
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<td></td>
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</tr>
<tr>
<td>4,4'-DNDPA</td>
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<tr>
<td>N-NitrosoDPA</td>
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</table>

0.336

Avg. % Stabilizer for Lot

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst TAKISHA DICKERSON
Avg. Tot. Stabilizers 0.34 %

Analyst Signature
Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature
Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81G070061  
**D533 / M6 propellant**

## Date of analysis:
Date: 12 JULY 2011

### Other Information
M6 Propellant

### Sample Data

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
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<td>4,4'-DNDP</td>
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<td>1001</td>
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<td>95</td>
<td>18335</td>
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<td>83.2</td>
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<td>167.7</td>
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<td>10.629</td>
<td>3041.2</td>
<td>330.5</td>
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<tr>
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<td>12.152</td>
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<td>913.3</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.034</td>
<td>1443.1</td>
<td>111.8</td>
</tr>
</tbody>
</table>

### Analyst
Mike Kile

### Analyst Signature

### Avg. Tot. Stabilizers
0.42 %

### Stable
YES

### Unstable

### Comments
- CATEGORY: A

### Actions to be Taken
# HPLC Propellant Stability Report

**Lot Number:** IND81D070015  
**D533 / M6 propellant**

**Date of Analysis:**  
**Date:** 20 OCT 2010

## Other Information
- **Sample Data**
  - Solvent: #1, 0.5000 g, 100 ml, ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
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<td>50.0 10.59</td>
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<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0 12.176</td>
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<td>0</td>
<td>0.000</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0 12.67</td>
<td>275.3</td>
<td>35.7</td>
<td>0.013</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 13.632</td>
<td>664.1</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0 14.943</td>
<td>1788.8</td>
<td>34.8</td>
<td>0.002</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 16.114</td>
<td>286</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 19.917</td>
<td>329.9</td>
<td>158.6</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.854

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.85 %

## Analyst Signature
- **Stable:** YES  | **Unstable:**

## Comments
- **CATEGORY:** A

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, in apparent good order, except as noted (contents and condition of contents or packages unknown) consigned, and despatched as indicated below, is subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property is subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect _____ Prepaid ___

Shipper’s No. 2874

Packing Date

Purchase Order No.

Location No. 2976

Consigned to

Fed Lic. Exp. Date

State Lic. Exp. Date

County

Customer No.

Route

Charge Account of

Customer P.O. No. Rel. No.

SHIPPED No. of PKS SHIPPED No. of UNITS PROPER SHIPPING NAME AND HAZARD CLASS RETURNED No. OF PKS RETURNED No. OF UNITS EMERGENCY RESPONSE PROCEDURE GUIDE NO. EXEMPTION DOT-E H M Placards Applied to Railcar or Motor Vehicle

UN0161, Powder, Smokeless, 1.3C, PG II #112 EXPLOSIVES 1.3

Truck No.

Trailer No.

Mileage

Total Packages

Gross Weight

Net Explosive Weight

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-8300 IN CANADA (ERF# 2-0000) 800-561-3636 ELSEWHERE CALL (703) 527-3987

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By __________________________ Date ___________________

Q CONSIGNEE Q CARRIER

By __________________________ Date ___________________

AUTHORIZED RECEIVER

EXP_001517
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-22-13

B/L# 2874 TRL 6810057

M-6

IND81L-070071  4 PTS
IND81D-070019  3 PTS
IND87D-070450  6 PTS
IND81F-070588  1 PT
IND82D-070113  2 PTS
IND83F-070276  1 PT
IND82L-070178  2 PTS
IND82J-070172  1 PT
IND85M-070430  2 PTS
IND83F-070278  5 PTS
IND83F-070274  2 PTS
IND80M-070011  3 PTS
IND86M-070673  6 PTS
IND85K-070598  4 PTS
42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
**MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)**

(Read Instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

<table>
<thead>
<tr>
<th>1. BILL OF LADUNG/TRANSPORTATION CONTROL NUMBER</th>
<th>2674</th>
</tr>
</thead>
</table>

**SECTION I - DOCUMENTATION**

<table>
<thead>
<tr>
<th>2. CARRIER/GOVERNMENT ORGANIZATION</th>
<th>REV/P</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>3. DATE/TIME OF INSPECTION</th>
<th>3/12/13</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4. LOCATION OF INSPECTION</th>
<th>RUDOLFS SYSTEMS 1218</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>5. OPERATOR(S) NAME(S)</th>
<th>BAHNERT, NEILHAN</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>6. OPERATOR(S) LICENSE NUMBER(S)</th>
<th>22G3/3007</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>7. MEDICAL EXAMINER'S CERTIFICATE*</th>
<th>1-3-15</th>
</tr>
</thead>
</table>

**SECTION II - MECHANICAL INSPECTION**

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>10. TYPE OF VEHICLE(S)</th>
<th>TRACTOR/ TRAILER</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>11. VEHICLE NUMBER(S)</th>
<th>T327</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>12. PART INSPECTED (X as applicable)</th>
<th>ORIGIN (1)</th>
<th>DESTINATION (2)</th>
<th>ORIGIN (1)</th>
<th>DESTINATION (2)</th>
<th>COMMENTS (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>a. EXHAUST SYSTEM</td>
</tr>
<tr>
<td>b. HORN OPERATIVE</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>l. BRAKE SYSTEM*</td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>m. SUSPENSION</td>
</tr>
<tr>
<td>d. WINDSHIELD/WIPERS</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>n. COUPLING DEVICES</td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>o. CARGO SPACE</td>
</tr>
<tr>
<td>f. WARNING EQUIPMENT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>p. LANDING GEAR*</td>
</tr>
<tr>
<td>g. FIRE EXTINGUISHERS*</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>q. TIRES, WHEELS, RIMS</td>
</tr>
<tr>
<td>h. ELECTRICAL WIRING</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>r. TAILGATEDOORS*</td>
</tr>
<tr>
<td>i. LIGHTS AND REPELLECTORS</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>s. TARPANIN*</td>
</tr>
<tr>
<td>j. FUEL SYSTEM*</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>SAT/INSAT</td>
<td>t. OTHER (Specify)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. INSPECTION RESULTS (X one)</th>
<th>ACCEPTED</th>
</tr>
</thead>
</table>

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

<table>
<thead>
<tr>
<th>14. SATELLITE MOTOR SURVEILLANCE SYSTEM (X one)</th>
<th>ACCEPTED</th>
<th>REJECTED</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>15. REMARKS</th>
</tr>
</thead>
</table>

**SECTION III - POST LOADING INSPECTION**

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>18. LOADED LAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>20. SEALS APPLIED TO CLOSED VEHICLE; TARPULIN APPLIED ON OPEN EQUIPMENT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>21. PROPER PLACARDS APPLIED</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>22. SHIPPING PAPERS/SD Form 836 FOR GOVERNMENT VEHICLE SHIPMENTS</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>23. COPY OF DD FORM 626 FOR DRIVER</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>24. SHIPPED UNDER DOT SPECIAL PERMIT 888</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>25. INSPECTOR SIGNATURE (Origin)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>26. DRIVER(S) SIGNATURE (Origin)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>27. INSPECTOR SIGNATURE (Destination)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>28. DRIVER(S) SIGNATURE (Destination)</th>
</tr>
</thead>
</table>
**SECTION I - PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
**Technical Information Phone No.:** 318.382.8700  

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>--</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

**PROPELLANT**

**HEALTH**

2 = MODERATE HAZARD

**FLAMMABILITY**

4 = SEVERE HAZARD

**PHYSICAL HAZARD**

4 = SEVERE HAZARD

**PERSONAL PROTECTION**

[B]

---

Routes of Entry: Inhalation; Skin; Ingestion

Carcinogenicity: None

First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.

INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.

Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.

Autoignition: 383°F (195°C)

Hazardous Combustion Products: Oxides of Carbon

Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep away from...use with adequate ventilation.

Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.

Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496

Evaporation Rate: <1 (Butylacetate = 1)

Solubility in Water: negligible


Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight. Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging – UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

**Other Information**  
**Sample Data**  
**Solvent**

<table>
<thead>
<tr>
<th>Sample #</th>
<th>0.5000 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.651

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.65 %

**Analyst Signature:**  
**Stable:** YES  
**Unstable:**

**Comments:**

**Lab. Supervisor Signature:**

**CATEGORY:** A

**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 7 FEB 2012

**Sample Data**  
**Solvent:** ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stabilizer</strong></td>
<td><strong>Conc. Ret Intg.</strong></td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4′ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2′ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4′ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>50.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>200.0</td>
</tr>
<tr>
<td><strong>Avg. % Stabilizer for Lot</strong></td>
<td></td>
</tr>
</tbody>
</table>

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.97%

**Analyst Signature**

**Stable** YES | Unstable

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND85K070598  
**D533 / M6 propellant**

**Date of analysis:** 25 AUG 2010

**Sample Data**  
*Solvent: ACN*  
*Sample #1: 0.5000 g, 100 ml*

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area</th>
<th>Intg. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
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<td></td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
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<td></td>
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<tr>
<td>2,2'DNDPA</td>
<td>50.0</td>
<td>7.038</td>
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<td></td>
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<tr>
<td>2,4'NDNPA</td>
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<td>9.931</td>
<td>938.5</td>
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<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td></td>
<td></td>
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<tr>
<td>2NDPA</td>
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<td>1809.7</td>
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<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4886.9</td>
<td>403.2</td>
<td>0.033</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.005

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.00 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:**  A

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND85M070430  
**D533 / M6 propellant**

**Date of analysis:** 6 MAY 2011

**Other Information**  
M6 Propellant

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.632</td>
<td>62</td>
<td>316</td>
<td>0.510</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>951</td>
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<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.203</td>
<td>137</td>
<td>21968</td>
<td>0.000</td>
</tr>
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<td>7.572</td>
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</tr>
<tr>
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<td>50.0</td>
<td>9.106</td>
<td>1579</td>
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<td>0.005</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.347</td>
<td>2905</td>
<td>107</td>
<td>0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.88</td>
<td>5183</td>
<td>374</td>
<td>0.029</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.734</td>
<td>1382</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.547

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** MIKE KILE  
**Avg. Tot. Stabilizers:** 0.55 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070588  
**D533 / M6 propellant**

**Date of analysis:** Date: 20 Dec 2010

**Other Information**
- **Sample Data**
  - #1 0.5000 g  
  - 100 ml  
  - ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDA</td>
<td>50.0</td>
<td>62.59</td>
<td>87.1</td>
<td>1411.1</td>
<td>1.620</td>
</tr>
<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>5.198</td>
<td>631.9</td>
<td>845.8</td>
<td>0.134</td>
</tr>
<tr>
<td>2,2'-DNDA</td>
<td>50.0</td>
<td>7.699</td>
<td>1074.2</td>
<td>15722.5</td>
<td>0.000</td>
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<tr>
<td>2,4'-DNPA</td>
<td>50.0</td>
<td>11.782</td>
<td>545</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>13.513</td>
<td>1464.9</td>
<td>246.8</td>
<td>0.017</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>15.189</td>
<td>1011.6</td>
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<td>DPA</td>
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<td>16.638</td>
<td>2894.7</td>
<td>309.8</td>
<td>0.043</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.069</td>
<td>720.1</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.814

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.81 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:** Date: 27 JULY 2011

**Other Information**
- M6 Propellant

**Sample Data**
- Solvent: ACN
- Sample #1: 0.50 g, 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
<td>622.1</td>
<td>0.552</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
<td>22209</td>
<td>0.000</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
<td>0</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.842</td>
<td>1020.3</td>
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<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
<td>1634.2</td>
<td>48.5</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.693</td>
<td>2956.2</td>
<td>98.3</td>
<td>0.003</td>
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<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
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<td>0.032</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  
0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
0.59 %

**Analyst Signature**

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND83F070278  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 11 JULY 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stabilizer</strong></td>
<td><strong>Conc. Ret Intg.</strong></td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
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<td>4,4'-DNOPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4'-DNOPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNOPA</td>
<td>50.0</td>
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<tr>
<td>2,4'-DNOPA</td>
<td>50.0</td>
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<tr>
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<td>50.0</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** **0.843**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** **0.84 %**

**Analyst Signature:**  
**Stable**: YES  
**Unstable**

**Comments:**  
**CATEGORY:** A

**Lab. Supervisor Signature:**  
**Actions to be Taken**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001531
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND83F070276  
**Date of analysis:** 4 Sep 2012

**D533 / M6 propellant**

**Sample Data**  
- **Solvent:** ACN  
- **Sample #1:** 0.50 g, 100 ml

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (Area 1)</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>578.6</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
<td>0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>23990</td>
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<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td>0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>40.6</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>88.7</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>812.6</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot**  
**1.249**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
**Mike Kile**  
**Avg. Tot. Stabilizers**  
**1.25 %**  
**Stable**  
**YES**  
**Unstable**  
**Comments**  
**CATEGORY:** **A**

**Actions to be Taken**

---

**Form #158**  
**Original Print Date:** 07/19/2010  
**EXP_001532**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82J070172  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 15 July 2011

### Other Information

- **Sample Data**  
  - Solvent: #1, 0.50 g, 100 ml, ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ref Area</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.688</td>
<td>60</td>
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<td>276.3</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.469</td>
<td>1060.3</td>
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<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.327</td>
<td>112.7</td>
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<td>25324</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.82</td>
<td>1131.9</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.368</td>
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<tr>
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<td>6225.1</td>
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<td>406.2</td>
<td>0.026</td>
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<td>75.0</td>
<td>13.037</td>
<td>1551.7</td>
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<td>0</td>
<td>0.000</td>
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</tbody>
</table>

### Avg. % Stabilizer for Lot

0.498

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82L070178  
**D533 / M6 propellant**

**Date of analysis:**  
Sample Data  
Sample #: 
Solvent: 
Sample: 
#1  
0.5000 g  
100 ml  
ACN

**Other Information**  
M8 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. ppm</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>60.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>60.0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>60.0</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>60.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>60.0</td>
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<tr>
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<td>50.0</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.446

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.45 %  
**Stable:** YES  
**Unstable:** 

**Comments:** CATEGORY: A

**Actions to be Taken**

---

**Form #158**  
Original Print Date: 07/19/2010  
EXP_001534
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82D070113  |  D533 / M6 propellant
---|---
Date of analysis: | Date: 6 JAN 2012

**Other Information**
- M6 Propellant

**Sample Data**
- Solvent: ACN
- Sample #1: 0.50 g, 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'DNPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
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<td>328.4</td>
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<tr>
<td>2,4-DNPA</td>
<td>50.0</td>
<td>3.304</td>
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<td>16</td>
</tr>
<tr>
<td>2,2'DNPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
<td></td>
<td>21955</td>
</tr>
<tr>
<td>2,4'DNPA</td>
<td>50.0</td>
<td>7.018</td>
<td>1103.9</td>
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<td>0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
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<td>66.8</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
<td></td>
<td>143.1</td>
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<tr>
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<td>200.0</td>
<td>10.956</td>
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<td>790.9</td>
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<td>75.0</td>
<td>11.689</td>
<td>1532.4</td>
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<td>0</td>
</tr>
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</table>

| Avg. % Stabilizer for Lot | 0.336 |

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON

**Avg. Tot. Stabilizers** 0.34 %

**Analyst Signature**

**Stable** YES  | **Unstable**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND80M070011  
**Date of analysis:** 22 March 2012

**Other Information**  
**Sample Data**  
- **Solvent:** ACN
- **Sample #1:** 0.50 g, 100 ml

<table>
<thead>
<tr>
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<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Area</th>
<th>Conc.</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
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<td>50.0</td>
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<td>870.9</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.054</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.295</td>
<td>945.9</td>
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<td>0.000</td>
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<tr>
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<td>50.0</td>
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<td>50.0</td>
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<td>2755.3</td>
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<td>103.4</td>
<td></td>
<td>0.004</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
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<td>588.9</td>
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<td>0</td>
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<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.334

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.33%

**Analyst Signature**  
Stable: YES  
Unstable: NO

**Lab. Supervisor Signature**  
Comments: CATEGORY: A

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, is subject to the conditions of this contract, and is held subject to the conditions of this contract and the Uniform Domestic Straight Bill of Lading Set forth in Uniform Freight Classification in effect on the date hereof.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and acceptor for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect Prepaid Location No.

Shipper's No.: 2875
Shipping Date
Purchase Order No.

(Mail or Street Address of Consignee — For purposes of notification only)

Consignee: Austin Powder Company
East Camden Plant
Minden, LA 71055

Fed Lic. Exp. Date
State Lic. Exp. Date
Customer No.

Route

Charge Account of

Customer P.O. No. Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPIING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EXEMPTION DOT-E</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
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<tbody>
<tr>
<td>No. of PKGS</td>
<td>No. of UNITS</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>No. of PKGS</td>
<td>No. of UNITS</td>
<td>#112</td>
<td>EXPLOSIVES 1.3</td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-9300 IN CANADA (ERF 62-0040) 800-561-2636 ELSEWHERE CALL (703) 527-2667

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By Date

Q CONSIGNEE Q CARRIER

By

AUTHORIZED RECEIVER

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, LA 71055
J 382-8700

DOT Hazardous Material Handling Number
Local Federal Explosives License No. 5-LA-119-20-1A-00057 (Shipper)

CONTAINS HAZARDOUS MATERIALS

019903

EXP_001537
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-22-13

B/L# 2875 TRL 17749

M-6

<table>
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<tr>
<th>Item</th>
<th>Quantity</th>
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<tr>
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<tr>
<td>IND86M-070673</td>
<td>16</td>
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<tr>
<td>IND82J-070178</td>
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<tr>
<td>IND80M-070009</td>
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<td>IND86M-070063</td>
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<td>IND84B-070327</td>
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<tr>
<td>IND82K-070175</td>
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</tr>
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</table>

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)
(Read Instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

SECTION 1 - DOCUMENTATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. CARRIER/GOVERNMENT ORGANIZATION

3. DATE/TIME OF INSPECTION

4. LOCATION OF INSPECTION

5. OPERATOR(S) NAME(S)

6. OPERATOR(S) LICENSE NUMBER(S)

7. MEDICAL EXAMINER'S CERTIFICATE*

8. (X if satisfactory at origin)

9. CVSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT*

SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE(s)

11. VEHICLE NUMBERS

12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>ORIGIN (1)</th>
<th>DESTINATION (1)</th>
<th>ORIGIN (2)</th>
<th>DESTINATION (2)</th>
<th>COMMENTS (3)</th>
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<td>SAT/UNSAT</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>k. EXHAUST SYSTEM</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>b. HORN OPERATIVE</td>
<td>l. BRAKE SYSTEM*</td>
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<td></td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td>m. SUSPENSION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. WINDSHIELD/WIPERS</td>
<td>n. COUPLING DEVICES</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td>o. CARGO SPACE</td>
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<td></td>
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<tr>
<td>f. WARNING EQUIPMENT</td>
<td>p. LANDING GEAR*</td>
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<tr>
<td>g. FIRE EXTINGUISHER*</td>
<td>q. TIRES, WHEELS, RIMS</td>
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<tr>
<td>h. ELECTRICAL WIRING</td>
<td>r. TAILGATEDOORS*</td>
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<td></td>
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<tr>
<td>i. LIGHTS AND REFLECTORS</td>
<td>s. TARPAULIN*</td>
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<tr>
<td>j. FUEL SYSTEM*</td>
<td>t. OTHER (Specify)</td>
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</table>

13. INSPECTION RESULTS (X one) ACCEPTED

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM (X one) ACCEPTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED LAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPAULIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 626 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
## SECTION 1 - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL ACGIH TLV EPA RQ (if defined) DOT RQ (if defined)</th>
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</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³ ACGIH TLV 5 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
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<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ (none defined) DOT RQ (none defined)</td>
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<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
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<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
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</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
<th>PERSONAL PROTECTION</th>
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<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>4</td>
<td>[B]</td>
</tr>
</tbody>
</table>

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER

The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR

This MSDS was prepared by: Ferris Calihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcalihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER          PRODUCT DESIGNATION/PART NUMBER
EX2010040603                 Redaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848  Page 1 of 1
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85K070598  
**D533 / M6 propellant**  
**Date of analysis:** Date: 25 AUG 2010  
**Other Information:**  
M6 Propellant  

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
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<td>0.972</td>
</tr>
<tr>
<td>2,4-XNDDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
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<td>2-XNDDPA</td>
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<td>12.813</td>
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<td>15.18</td>
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<td>0.000</td>
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</table>

| Avg. % Stabilizer for Lot | 1.005 |

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.00%  
**Analyst Signature**  
**Stable:** YES  
**Unstable**

**Comments**  
**CATEGORY:** A  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84B070327  
**Date of analysis:** Date: 4 Sep 2012  
**Other Information:** Sample Data  
**Solvent:** #1, 0.50 g, 100 ml, ACN  
**M6 Propellant**

## Standards (ERG-005)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret.</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. %</th>
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<tbody>
<tr>
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<td>0.889</td>
<td>48.8</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
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<td>2,2' DNDPA</td>
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<td>5.22</td>
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<td>0</td>
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### Avg. % Stabilizer for Lot: 1.086%

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.09 %  
**Analyst Signature:**  
**Stable:** YES Unstable

**Lab. Supervisor Signature:**  
**Comments:** CATEGORY: A  
**Actions to be Taken:**

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001546
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  
**D533 / M6 propellant**

**Date of analysis:**

**Other Information**

**Sample Data**

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<th></th>
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<tbody>
<tr>
<td>#1</td>
<td></td>
<td></td>
<td>0.50 g</td>
<td>100 ml</td>
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**Standards (ERG-006)**

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<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
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<td>ppm</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.073</td>
<td>1512.2</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.402

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.40%

**Analyst Signature**

**Stable** YES | Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**D533 / M6 propellant**

### Date of analysis:
**Date:** 6 AUG 2010

### Other Information
- **Sample Data**
  - **Solvent:** ACN
  - **Sample #1:** 0.5000 g, 100 ml
- **M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret. Time</th>
<th>Intg. Area 1</th>
<th>Conc.</th>
<th>Intg.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>4.91</td>
<td>382.3</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.825</td>
<td>437</td>
<td>5134.1</td>
<td>1.343</td>
<td></td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>11.341</td>
<td>632.4</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>11.95</td>
<td>441.7</td>
<td>87.4</td>
<td>0.014</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.713</td>
<td>827.6</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>200.0</td>
<td>14.06</td>
<td>2176</td>
<td>192.5</td>
<td>0.023</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>75.0</td>
<td>14.999</td>
<td>558.4</td>
<td>90.1</td>
<td>0.017</td>
<td></td>
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<tr>
<td>N-NitrosoDPA</td>
<td>200.0</td>
<td>14.06</td>
<td>2176</td>
<td>254.6</td>
<td>0.068</td>
<td></td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot: 1.465

### Comments
- **CATEGORY:** A
- **Stable:** YES  
- **Unstable:**

### Actions to be Taken

---

**Form #158**

Original Print Date: 07/19/2010

**019914**  
**EXP_001548**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82J070172  
**D533 / M6 propellant**

**Date of analysis:** Date: 15 July 2011

**Other Information**  
M6 Propellant

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>60</td>
<td>0.698</td>
<td>60</td>
<td>276.3</td>
<td>0.461</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>1060.3</td>
<td>3.469</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>112.7</td>
<td>5.327</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>1131.9</td>
<td>7.82</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>1817.5</td>
<td>9.358</td>
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<td></td>
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<tr>
<td>2NDPA</td>
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<td>3250</td>
<td>10.643</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>6225.1</td>
<td>12.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>1551.7</td>
<td>13.037</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.498

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Mike Kile  
**Avg. Tot. Stabilizers** 0.50 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND80M070009  
**D533 / M6 propellant**

**Date of analysis:** 20 SEP 2010

**Other Information**

**Sample Data**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>50.0</td>
<td>2.113</td>
<td>241.3</td>
<td>1503.9</td>
<td>0.623</td>
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<tr>
<td></td>
<td>50.0</td>
<td>4.997</td>
<td>1505.8</td>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50.0</td>
<td>7.178</td>
<td>3394.6</td>
<td>16988.6</td>
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</tr>
<tr>
<td></td>
<td>50.0</td>
<td>10.355</td>
<td>947.6</td>
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<td></td>
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<tr>
<td></td>
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<td>11.977</td>
<td>1346.1</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>50.0</td>
<td>13.451</td>
<td>1788.2</td>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.881</td>
<td>5045.5</td>
<td>586</td>
<td>0.046</td>
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</tr>
<tr>
<td></td>
<td>75.0</td>
<td>16.022</td>
<td>1339.6</td>
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<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Stabilizer**

<table>
<thead>
<tr>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDA</td>
<td>241.3</td>
<td></td>
</tr>
<tr>
<td>2,4-DNDA</td>
<td>1505.8</td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDA</td>
<td>3394.6</td>
<td></td>
</tr>
<tr>
<td>2,4'-DNDA</td>
<td>947.6</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>1346.1</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>1788.2</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>5045.5</td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>1339.6</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.670

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.67 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**

**Lab. Supervisor Signature**

**Actions to be Taken**

**CATEGORY:** A
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, on said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry the usual place of delivery of said destination. On its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service done performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (i) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the Shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect Prepaid

Location No.

Shippers No. 2876

Shipping Date

Purchase Order No.

Mail or Street Address of Consignee — For purposes of notification only
Consigned to
Fed Lic. Exp. Date

Destination
State Exp. Date

County
Customer No.

Route

Charge Account of
Customer P.O. No.
Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIP NAME</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EMERGENCY</th>
<th>EXEMPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Pegs</td>
<td>No. of Units</td>
<td>AND HAZARD CLASS</td>
<td>No. of Pegs</td>
<td>No. of Units</td>
<td>PROCEDURE</td>
<td>DOT-E</td>
</tr>
<tr>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td>EXPLOSIVES 1.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-9300 IN CANADA (ERP #2-0040) 500-551-3636 ELSEWHERE CALL (703) 527-3887

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

AUTHORIZE RECEIVER

Permanent Address of Shipper:
Explo Systems, Inc.
400 Java Road
Sen, Louisiana 71055

DOT Hazardous Material Handling Number 5-LA-119-20-1A-00057

Local Federal Explosives License No. 5-LA-119-20-1A-00057
(Shipper)

019917

CONTAINS HAZARDOUS MATERIALS

EXP_001551
AUSTIN POWDER PACKING LIST:

SHIPSMENT DATE 3-24-13

B/L# 2876 TRL 6810057

M-6

IND82L-070178  16 PTS
IND86M-070673  12 PTS
IND81B-070013  3 PTS
IND88H-070598  7 PTS
IND82K-070173  1 PT
IND82E-070114  3 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

35,280 lbs.

LIONEL KOONS

EXPLO SYSTEMS INC
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-24-13

B/L# 2876 TRL 6810057

M-6

IND82L-070178    16 PTS
IND86M-070673    12 PTS
IND81B-070013    3 PTS
IND88H-070598    7 PTS
IND82K-070173    1 PT
IND82E-070114    3 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

[Signature]

LIONEL KOONS

EXPLO SYSTEMS INC
# MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

## SECTION 1 - DOCUMENTATION

| 1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER | 2 & 76 |

### 2. CARRIER/GOVERNMENT ORGANIZATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVK</td>
<td></td>
</tr>
</tbody>
</table>

### 3. DATE/TIME OF INSPECTION

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/24/19</td>
<td></td>
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</table>

### 4. LOCATION OF INSPECTION

<table>
<thead>
<tr>
<th>ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RYDA SYSTEMS INC</td>
</tr>
</tbody>
</table>

### 5. OPERATOR(S) NAME(S)

<table>
<thead>
<tr>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble, Henry E</td>
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</tbody>
</table>

### 6. OPERATOR(S) LICENSE NUMBER(S)

<table>
<thead>
<tr>
<th>LICENSE NUMBER</th>
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</thead>
<tbody>
<tr>
<td>ZR233932904</td>
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### 7. MEDICAL EXAMINER’S CERTIFICATE

<table>
<thead>
<tr>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/3/15</td>
</tr>
</tbody>
</table>

### 8. (X if satisfactory at origin)

#### a. MILITARY HAZMAT ENDORSEMENT

<table>
<thead>
<tr>
<th>a. DRIVER’S VEHICLE INSPECTION REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUCK/TRACTOR</td>
</tr>
</tbody>
</table>

#### b. VALID LEASE

<table>
<thead>
<tr>
<th>C. ROUTE PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPY OF 49 CFR PART 397</td>
</tr>
</tbody>
</table>

### 9. CVSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

### 10. TYPE OF VEHICLE(S)

<table>
<thead>
<tr>
<th>TRACTOR/ TRAILER</th>
<th>DRONY</th>
</tr>
</thead>
</table>

### 11. VEHICLE NUMBER(S)

| TRAC # 6436 | TRUR 6820057 |

### 12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>ORIGIN (1)</th>
<th>DESTINATION (2)</th>
<th>COMMENTS (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT UNSAT SAT UNSAT</td>
<td>SAT UNSAT SAT UNSAT</td>
<td></td>
</tr>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>k. EXHAUST SYSTEM</td>
<td></td>
</tr>
<tr>
<td>b. HORN OPERATIVE</td>
<td>l. BRAKE SYSTEM*</td>
<td></td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td>m. SUSPENSION</td>
<td></td>
</tr>
<tr>
<td>d. WINDSHIELD/WIPERS</td>
<td>n. COUPLING DEVICES</td>
<td></td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td>o. CARGO SPACE</td>
<td></td>
</tr>
<tr>
<td>f. WARNING EQUIPMENT</td>
<td>p. LANDING GEAR*</td>
<td></td>
</tr>
<tr>
<td>g. FIRE EXtinguisher*</td>
<td>q. TIRES, WHEELS, RAMS</td>
<td></td>
</tr>
<tr>
<td>h. ELECTRICAL WIRING</td>
<td>r. TAILGATEDOORS*</td>
<td></td>
</tr>
<tr>
<td>i. LIGHTS AND REFLECTORS</td>
<td>s. TARPULIN*</td>
<td></td>
</tr>
<tr>
<td>j. FUEL SYSTEM*</td>
<td>t. OTHER (Specify)</td>
<td></td>
</tr>
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</table>

### 13. INSPECTION RESULTS (X one)

<table>
<thead>
<tr>
<th>ACCEPTED</th>
<th>REJECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(if rejected give reason under “Remarks”. Equipment will be approved if deficiencies are corrected prior to loading.)

### 14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one)

<table>
<thead>
<tr>
<th>ACCEPTED</th>
<th>REJECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

### 15. REMARKS

<table>
<thead>
<tr>
<th>15. REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

### 16. INSPECTOR SIGNATURE (Origin)

<table>
<thead>
<tr>
<th>16. INSPECTOR SIGNATURE (Origin)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 17. INSPECTOR SIGNATURE (Destination)

<table>
<thead>
<tr>
<th>17. INSPECTOR SIGNATURE (Destination)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

## SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

### 18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

<table>
<thead>
<tr>
<th>18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

<table>
<thead>
<tr>
<th>19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 20. SEALS APPLIED TO CLOSED VEHICLE; TARPULIN APPLIED ON OPEN EQUIPMENT

<table>
<thead>
<tr>
<th>20. SEALS APPLIED TO CLOSED VEHICLE; TARPULIN APPLIED ON OPEN EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 21. PROPER PLACARDS APPLIED

<table>
<thead>
<tr>
<th>21. PROPER PLACARDS APPLIED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

<table>
<thead>
<tr>
<th>22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 23. COPY OF DD FORM 626 FOR DRIVER

<table>
<thead>
<tr>
<th>23. COPY OF DD FORM 626 FOR DRIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 24. SHIPPED UNDER DOT SPECIAL PERMIT 868

<table>
<thead>
<tr>
<th>24. SHIPPED UNDER DOT SPECIAL PERMIT 868</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 25. INSPECTOR SIGNATURE (Origin)

<table>
<thead>
<tr>
<th>25. INSPECTOR SIGNATURE (Origin)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 26. DRIVER(S) SIGNATURE (Origin)

<table>
<thead>
<tr>
<th>26. DRIVER(S) SIGNATURE (Origin)</th>
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</thead>
<tbody>
<tr>
<td></td>
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### 27. INSPECTOR SIGNATURE (Destination)

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<thead>
<tr>
<th>27. INSPECTOR SIGNATURE (Destination)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### 28. DRIVER(S) SIGNATURE (Destination)

<table>
<thead>
<tr>
<th>28. DRIVER(S) SIGNATURE (Destination)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
# MATERIAL SAFETY DATA SHEET

## PROPELLANT (Wetted)

### SECTION I - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
**Technical Information Phone No.:** 318.382.8700  
For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL</td>
<td>ACGIH TLV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td>5 mg/m³</td>
<td>10 lbs</td>
<td>10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL</td>
<td>ACGIH TLV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>10 mg/m³</td>
<td>(none defined)</td>
<td>(none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL</td>
<td>ACGIH TLV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>none published</td>
<td>none published</td>
<td>(none defined)</td>
<td>(none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flamable solid)</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL</td>
<td>ACGIH TLV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>none published</td>
<td>none published</td>
<td>(none defined)</td>
<td>(none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL</td>
<td>ACGIH TLV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>10 mg/m³</td>
<td>10 lbs</td>
<td>10 lbs</td>
</tr>
</tbody>
</table>
# SECTION II - HAZARDS IDENTIFICATION

## PROPELLANT

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>4</td>
<td>[B]</td>
</tr>
</tbody>
</table>

### HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>A</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td>B</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>C</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td>D</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
<td>E</td>
</tr>
</tbody>
</table>

### PERSONAL PROTECTION EQUIPMENT

- A: Chemical Resistant Gloves
- B: Respirator
- C: Safety Glasses
- D: Protective Clothing
- E: Fire Resistant Coveralls

### Routes of Entry:
- Inhalation; Skin; Ingestion

### Carcinogenicity:
None

### First Aid Measures:
- **EYES** - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician.
- **SKIN** - Wash with soap and running water.
- **INGESTION** - Contact physician immediately.
- **INHALATION** - Remove to fresh air. Treat irritation symptomatically; call physician.

### Firefighting Measures:
- Self-extinguishing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time.
- Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

### Unusual Fire/Explosion Hazard:
- Easily ignited, highly combustible; protect from fire and sparks and extreme heat.

### Autoignition:
- 383°F (195°C)

### Hazardous Combustion Products:
- Oxides of Carbon

### Accidental Release Measures:
- **SPILL** - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brush or other non-sparking tools and utensils. **DO NOT** hammer or otherwise cause jarring forces to spilled material (explosion or autoignition could occur with impact force being applied).

# SECTION III - HANDLING AND STORAGE

### Precautions:
- Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

### Other Special Precautions:
- Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.

### Ventilation:
- Local and general ventilation necessary to keep air concentration below TLVs.

### Personal Protective Equipment:
- Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

# SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

### Specific Gravity:
1.496

### Evaporation Rate:
<1 (Butylacetate = 1)

### Solubility in Water:
Negligible

### Appearance and Odor:
Hard Cylinder Perforated, Smooth, Greenish Yellow. Odorless.

### Materials to Avoid:
- Oxides of Nitrogen and Carbon.

---

MSDS - Propellant  
Rev. 1 – July 13, 2012  
Exple Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explo-systems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER: EX2010040603
PRODUCT DESIGNATION/PART NUMBER: Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86M070673  
**Date of analysis:** 7 FEB 2012  

**Other Information:**  
- **Sample Data**  
  - Sample: #1  
  - **Solvent**  
    - 0.50 g  
    - 100 ml  
    - ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret (Time)</th>
<th>Intg. (Area)</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.863</td>
<td>50.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.336</td>
<td>893.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.03</td>
<td>726.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.182</td>
<td>1225.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.642</td>
<td>1532.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.759</td>
<td>2784.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.235</td>
<td>5480.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.979</td>
<td>1363.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Intg. for Conc:**  
- 452.6  
- 0  
- 22299  
- 0  
- 67.5  
- 120.3  
- 727.3  
- 0

**Avg. % Stabilizer for Lot:** 0.965

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.97%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  

**Lab. Supervisor Signature**  

**Actions to be Taken**

---

**Form #158**  
**Original Print Date:** 07/19/2010
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82L070178  
**D533 / M6 propellant**

**Date of analysis:**  
**Sample Data**  
**Solvent**  
**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc.</td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>4,4'-DNDDA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNDDA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-Nitroso-DPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

| Avg. % Stabilizer for Lot | 2.446 |

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Mike Kile  
**Avg. Tot. Stabilizers** 2.45 %

**Analyst Signature**  
**Comments**

**Lab. Supervisor Signature**  
**Category:** A

**Actions to be Taken**

Form #155  
**Original Print Date:** 07/19/2010
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070173  
**D533 / M6 propellant**

**Other Information**  
**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-005)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Rel.</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.152</td>
<td>1065.2</td>
<td></td>
<td>3148.2</td>
<td>0.295</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>11.075</td>
<td>1789.9</td>
<td></td>
<td>28965.1</td>
<td>2.566</td>
</tr>
<tr>
<td>2.4' DNDPA</td>
<td>50.0</td>
<td>11.744</td>
<td>1598.2</td>
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<td>254.0</td>
<td>0.016</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.583</td>
<td>2392</td>
<td></td>
<td>0.000</td>
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</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>14.006</td>
<td>5798.8</td>
<td></td>
<td>251.9</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>15.107</td>
<td>1617.9</td>
<td></td>
<td>612.3</td>
<td>0.151</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.991</td>
<td>2204.9</td>
<td></td>
<td>398.1</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 3.033

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 3.03%

**Analyst Signature**  
**Stable** YES Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070114  
**D533 / M6 propellant**

**Date of analysis:** Date: 22 NOV 2011

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDA</td>
<td>50.0</td>
<td>0.753</td>
<td>205.4</td>
<td>623.3</td>
<td>0.303</td>
</tr>
<tr>
<td>2,4'-DNDA</td>
<td>50.0</td>
<td>3.383</td>
<td>927.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDA</td>
<td>50.0</td>
<td>5.127</td>
<td>481.8</td>
<td>21922</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNDA</td>
<td>50.0</td>
<td>7.38</td>
<td>1001.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.693</td>
<td>1609.3</td>
<td>58.6</td>
<td>0.004</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.053</td>
<td>2888.9</td>
<td>118</td>
<td>0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.586</td>
<td>5621.7</td>
<td>791.2</td>
<td>0.056</td>
</tr>
<tr>
<td>N-NitroDPA</td>
<td>75.0</td>
<td>12.383</td>
<td>1361.9</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.367

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.37%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry at usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service listed performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, it this is a rail or rail-water shipment, (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

**Freight Charges:** Collect

**Shopper’s No:** 2877
**Shipping Date:** 01/29/13
**Purchase Order No:**

**Consigned to:**

**Destination:**

**County:**

**Route:**

**Charge Account Of:**

**Customer P.O. No:**

**Exemption DOT-E:** EXPLOSIVES 1.3

**Placards Applied to Railcar or Motor Vehicle:**

**RECEIVE MAR 25, 2013**

**AUSTIN POWDER COMPANY EAST CAMDEN PLANT**

**Truck No:** 7306
**Trailer No:** 17747

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMtREC – DAY OR NIGHT

IN THE USA CALL 800-424-5030  IN CANADA (ERP #0-0040) 800-561-3828  ELSEWHERE CALL (703) 527-3987

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

Q CONSIGNEE
Q CARRIER

By

AUTHORIZED RECEIVER
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-24-13

B/L# 2877 TRL 17749

M-6

IND82E-070114   2 PTS
IND81A-070020   1 PT
IND84L-070454   2 PTS
IND83F-070276   4 PTS
IND82H-070168   21 PTS
IND81L-070072   2 PTS
IND84F-070587   1 PT
IND85K-070588   7 PTS
IND85C-070512   1 PT
IND84G-070326   1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-24-13

B/L# 2877 TRL 17749

M-6

IND82E-070114  2 PTS
IND81A-070020  1 PT
IND84L-070454  2 PTS
IND83F-070276  4 PTS
IND82H-070168  21 PTS
IND81L-070072  2 PTS
IND84F-070587  1 PT
IND85K-070588  7 PTS
IND85C-070512  1 PT
IND84G-070326  1 PT
42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER: 2877

SECTION 1 - DOCUMENTATION

2. CARRIER/GOVERNMENT ORGANIZATION: REUJK

3. DATE/TIME OF INSPECTION: 2/24/19

4. LOCATION OF INSPECTION: EROCO SYSTEMS L.L.C.

5. OPERATOR(S) NAME(S): PEDERSON, THOMAS

6. OPERATOR(S) LICENSE NUMBER(S): 0590-825-490000 F/L

7. MEDICAL EXAMINER'S CERTIFICATE*: 2/25/19

8. (X if satisfactory at origin)

   a. MILITARY HAZMAT ENDORSEMENT: [ ]
      d. ERG OR EQUIVALENT COMMERCIAL: [ ]

   b. VALID LEASE*: [ ]

   c. ROUTE PLAN: [ ]
      f. COPY OF 49 CFR PART 397:

   g. TRUCK/TRACTOR: [ ]
      h. TRAILER: [ ]

SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE(S): TRACTOR TRAILER / DROM

11. VEHICLE NUMBER(S): TRAC 0073G / TRIL 17749

12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>ORIGIN (1)</th>
<th>DESTINATION (2)</th>
<th>SAT (3)</th>
<th>UNSAT (3)</th>
<th>COMMENTS (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>k. EXHAUST SYSTEM</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>b. HORN OPERATIVE</td>
<td>l. BRAKE SYSTEM</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td>m. SUSPENSION</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>d. WINDSHIELD WIPERS</td>
<td>n. COUPLING DEVICES</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td>o. CARGO SPACE</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>f. WARNING EQUIPMENT</td>
<td>p. LANDING GEAR*</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>g. FIRE EXTINGUISHER*</td>
<td>q. TIRES, WHEELS, RIMS</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>h. ELECTRICAL WIRING</td>
<td>r. TAILGATEDOORS*</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>i. LIGHTS AND REFLECTORS</td>
<td>s. TARPULIN*</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
<tr>
<td>j. FUEL SYSTEM*</td>
<td>t. OTHER (Specify)</td>
<td>SAT</td>
<td>UNSAT</td>
<td></td>
</tr>
</tbody>
</table>

13. INSPECTION RESULTS (X one) ACCEPTED | REJECTED

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED | REJECTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPULIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/ADD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 626 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
**EXPO SYSTEMS, INC.**

Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

MATERIAL SAFETY DATA SHEET

**SECTION I - PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted

Technical Information Phone No.: 318.382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt %</th>
<th>OSHA PEL ACGIH TLV EPA RQ (if defined) DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³ ACGIH TLV 5 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>—</td>
<td>87.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

MINERAL HAZARD 4

PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX

4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER

The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR

This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**Date of Analysis:** 10 AUGUST 2012  
**D533 / M6 propellant**

### Sample Data

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g / 100 ml ACN</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>8.8</td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.343</td>
<td>910.9</td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.034</td>
<td>3858.6</td>
<td></td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.363</td>
<td>1013.2</td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.784</td>
<td>1647.3</td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.95</td>
<td>2919.6</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.386</td>
<td>5857.1</td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.173</td>
<td>1371.4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>112.9</td>
<td>1.283</td>
</tr>
<tr>
<td>22576</td>
<td>0.000</td>
</tr>
<tr>
<td>59.7</td>
<td>0.004</td>
</tr>
<tr>
<td>95.5</td>
<td>0.003</td>
</tr>
<tr>
<td>714.1</td>
<td>0.049</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.339

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

**Takisha Dickerson**  
**Signature:**

**Analyst Signature**

**Comments**  
**CATEGORY:** A

**Actions to be Taken**

---

**Form #158**

Original Print Date: 27/02/2013

EXP_001573
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number: IND84G070326</th>
<th>D533 / M6 propellant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of analysis:</td>
<td>Date: 3 MAY 2012</td>
</tr>
</tbody>
</table>

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td>4,4'-DNDBA</td>
<td>50.0</td>
<td>0.867</td>
<td>104.4</td>
</tr>
<tr>
<td>2,4-DNDBA</td>
<td>50.0</td>
<td>3.335</td>
<td>1105.6</td>
</tr>
<tr>
<td>2,2'-DNDBA</td>
<td>50.0</td>
<td>5.007</td>
<td>4986.7</td>
</tr>
<tr>
<td>2,4'-DNDBA</td>
<td>50.0</td>
<td>7.137</td>
<td>1206.9</td>
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<tr>
<td>4-NDBA</td>
<td>50.0</td>
<td>8.593</td>
<td>1969.2</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.153</td>
<td>7041.6</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.897</td>
<td>1704.5</td>
</tr>
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## Sample #

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Intg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
</tr>
<tr>
<td>4,4'-DNDBA</td>
<td></td>
<td>324.4</td>
</tr>
<tr>
<td>2,4-DNDBA</td>
<td></td>
<td>23068</td>
</tr>
<tr>
<td>2,2'-DNDBA</td>
<td></td>
<td>87.1</td>
</tr>
<tr>
<td>2,4'-DNDBA</td>
<td></td>
<td>151.4</td>
</tr>
<tr>
<td>4-NDBA</td>
<td></td>
<td>785.8</td>
</tr>
<tr>
<td>DPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Avg. % Stabilizer for Lot

| 0.364 |

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**

Takisha Dickerson

**Avg. Tot. Stabilizers**

0.36 %

**Analyst Signature**

Stable **YES** Unstable

**Lab. Supervisor Signature**

Comments

CATEGORY: A

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84L070454  
**Date of analysis:** Date: 4 MAY 2012  
**Other Information**  
M6 Propellant  
Sample Data #1  
**Solvent**  
ACN  
**100 ml 0.50 g**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.867</td>
<td>83.7</td>
<td>400.6</td>
<td>0.479</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.338</td>
<td>1156.5</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.017</td>
<td>5373.7</td>
<td>23342</td>
<td>0.000</td>
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<td>2,4’ DNPDA</td>
<td>50.0</td>
<td>7.147</td>
<td>1263.8</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
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<td>8.695</td>
<td>2061.4</td>
<td>48.3</td>
<td>0.002</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>9.687</td>
<td>3694.9</td>
<td>94.1</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.119</td>
<td>7683.7</td>
<td>721.2</td>
<td>0.038</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.99</td>
<td>2133.1</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Average % Stabilizer for Lot 0.521

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.52 %  
**Stable** YES Unstable  
**Category:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  |  **D533 / M6 propellant**  
**Date of Analysis:**  |  **Date:** 4 Sep 2012  

**Other Information**  
M6 Propellant  

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent #1</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

**Standards (ERG-006)**  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td></td>
<td>578.6</td>
<td>1.186</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
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<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td></td>
<td>23990</td>
<td>0.000</td>
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<tr>
<td>2',4' DNDPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td></td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
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<td>1586.8</td>
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<td>40.6</td>
<td>0.003</td>
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<td>88.7</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
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<td>5671.5</td>
<td></td>
<td>812.6</td>
<td>0.057</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  

1.249

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  

**Avg. Tot. Stabilizers:** 1.25 %  
**Analyst Signature**  

**Stable** YES Unstable  

**Comments** CATEGORY: A  

**Lab. Supervisor Signature**  

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Date of analysis:**

**Other Information**

**Sample Data**  
| #1 | 0.5000 g | 100 ml | ACN |

**Solvent**

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg.</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4-DNPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>2540.4</td>
<td>0.228</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>31231.4</td>
<td>2.622</td>
</tr>
<tr>
<td>2,2' DNPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>51.5</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>143.2</td>
<td>0.011</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
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</tr>
<tr>
<td>2NDPA</td>
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<td>13.939</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>985.4</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 2.88%

**Unstable**

**Comments**

**Lab. Supervisor Signature**

**Actions to be Taken**

**CATEGORY:** A
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070114  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 22 NOV 2011

**Other Information**  
M6 Propellant

**Solvent**  
Sample Data  
#1  0.50 g  100 ml  ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret ppm</th>
<th>Time</th>
<th>Intg. ppm</th>
<th>Area</th>
<th>Conc.</th>
<th>Intg.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.753</td>
<td>205.4</td>
<td>623.3</td>
<td>0</td>
<td>0.303</td>
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<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.383</td>
<td>927.4</td>
<td>21922</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.127</td>
<td>481.8</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
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<td>1001.4</td>
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<td>10.053</td>
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<td>118</td>
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<td>0.056</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.383</td>
<td>1361.9</td>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot  
0.367

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.37 %

**Analyst Signature**  
Stable | YES | Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070072  
**D533 / M6 propellant**

**Date of analysis:** 
**Date:** 29 MAY 2012

**Other Information**  
**Sample Data**  
Solvent  
#1  
0.50 g  
100 ml  
ACN

**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4' DNSPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNSPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2' DNSPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4' DNSPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>60.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.363

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.36 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Lab. Supervisor Signature**  
**Comments:**  
**CATEGORY:** A

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, to the said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry the said property over all or any portion of the said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (f) in Uniform Freight Classification in effect on the date hereof. If this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Freight Charges: Collect Prepaid

Consignee: Austin Powder Company
1906 North Road
Camden, LA 71726

Charges Accounted For

Customer P.O. No. 

Charge Account No. 82603.4996.30.95

PROPERTY SHIPS NAME AND HAZARD CLASS

UN0161, Powder, Smokeless, 1.3C, PG II

EXEMPTION DOT-E H M

#112 EXPLOSIVES 1.3

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300 IN CANADA (ERP #2-0040) 800-561-3636 ELSEWHERE CALL (703) 527-3687

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By 
Q CONSIGNEE Q CARRIER
By 
AUTHORIZED RECEIVER

Per 

DOT Hazardous Material Handling Number
Local Federal Explosives License No. 5-LA-119-20-1A-00057 (Shipper)

EXP_001580
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-25-13

B/L# 2878 TRL 7810099

M-6

IND84G-070326  1 PT
IND83F-070276  2 PTS
IND84A-070323  3 PTS
IND82L-070178  2 PTS
IND82H-070168  3 PTS
IND83H-070287  1 PT
IND82K-070175  1 PT
IND81D-070015  17 PTS
IND86E-070616  12 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
**MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)**

(Read Instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

<table>
<thead>
<tr>
<th>Item</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER</td>
<td>2578</td>
<td></td>
</tr>
</tbody>
</table>

**SECTION I - DOCUMENTATION**

2. CARRIER/GOVERNMENT ORGANIZATION: **REUR**

3. DATE/TIME OF INSPECTION: 3/25/13

4. LOCATION OF INSPECTION: **Edward Systems, Inc.**

5. OPERATOR(S) NAME(S): **Barrett, Howard**

6. OPERATOR(S) LICENSE NUMBER(S): **R20253009 MO**

7. MEDICAL EXAMINER'S CERTIFICATE: 1-3-15

8. (X if satisfactory at origin)

   - d. Erg or equivalent commercial: **YES**
   - e. Driver's vehicle inspection report: **YES**
   - a. Truck/tractor: **YES**
   - b. Trailer: **NO**

**SECTION II - MECHANICAL INSPECTION**

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Type of Vehicle (X as applicable)</th>
<th>Tractor/Trailer/Diagram</th>
<th>TRAILER #6934</th>
<th>TRUCK #7810059</th>
</tr>
</thead>
</table>

12. PART INSPECTED (X as applicable)

   - a. SPARE ELECTRICAL FUSES
   - b. HORN OPERATIVE
   - c. STEERING SYSTEM
   - d. WINDSHIELD WASHERS
   - e. MIRRORS
   - f. WARNING EQUIPMENT
   - g. FIRE EXTINGUISHER
   - h. ELECTRICAL WIRING
   - i. LIGHTS AND REFLECTORS
   - j. FUEL SYSTEM

13. INSPECTION RESULTS (X one) ACCEPTED **✓** REJECTED **X**

   (If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM (X one) ACCEPTED **✓** REJECTED **X**

15. REMARKS

   - **Signature**

**SECTION III - POST LOADING INSPECTION**

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Item</th>
<th>Origin (1)</th>
<th>Destination (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR</td>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT</td>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>20. SEAL APPLIED TO CLOSED VEHICLE; TARPOLIN APPLIED ON OPEN EQUIPMENT</td>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>21. proper placards applied</td>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>22. SHIPPING PAPERS/DD FORM 856 FOR GOVERNMENT VEHICLE SHIPMENTS</td>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>23. COPY OF DD FORM 856 FOR DRIVER</td>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>24. SHIPPED UNDER DOT SPECIAL PERMIT 868</td>
<td>SAT</td>
<td>UNSAT</td>
</tr>
</tbody>
</table>

25. INSPECTOR SIGNATURE (Origin)

   - **Signature**

26. DRIVER(S) SIGNATURE (Origin)

   - **Signature**

27. INSPECTOR SIGNATURE (Destination)

   - **Signature**

28. DRIVER(S) SIGNATURE (Destination)

   - **Signature**
PROPELLANT (Wetted)

### SECTION I - PRODUCT IDENTIFICATION

**Product Name:** Propellant, Explosive, Solid, Wetted

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>—</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PERSONAL PROTECTION [B]

Hazardous Materials Identification System

Hazard Index

4 = SEVERE HAZARD
2 = SERIOUS HAZARD
1 = MODERATE HAZARD
0 = Slight HAZARD
0 = MINIMAL HAZARD

Personal Protection Equipment

PERSONAL PROTECTION INDEX

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.

Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible

Materials to Avoid: Oxides of Nitrogen and Carbon.

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None

First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.

INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.

Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.

Autoignition: 383°F (195°C)

Hazardous Combustion Products: Oxides of Carbon

Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brush or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER PRODUCT DESIGNATION/PART NUMBER
EX2010040603 Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**Date of analysis:** Date: 19 NOV 2010  
**D533 / M6 propellant**  

**Other Information**  
Sample Data:  
#1  
0.5000 g  
100 ml  
ACN  
M6 Propellant  

**Standards (ERG-006)**  

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
<td>654.4</td>
<td>0.482</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>717.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.835</td>
<td>736.3</td>
<td>13022.2</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>11.713</td>
<td>779</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>13.454</td>
<td>462.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>15.161</td>
<td>1164.1</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
<td>4078.5</td>
<td>221.2</td>
<td>0.022</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.504

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**  
Stable YES Unstable Comments CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326

**D533 / M6 propellant**

**Date of analysis:**

**Sample Data**

- **Solvent:**
  - #1
  - 0.50 g
  - 100 ml
  - ACN

**Other Information**

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Concentration (ppm)</th>
<th>Retention Time (Area 1)</th>
<th>Intensity</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.867</td>
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<td>2,2'-DNDPA</td>
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<td>0.000</td>
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<td>1969.2</td>
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<td>200.0</td>
<td>11.153</td>
<td>7041.8</td>
<td>785.8</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.897</td>
<td>1704.5</td>
<td>0.000</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.364

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.36%

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84A070323  
**Date of analysis:** Date: 21 DEC 2011  
**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
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<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1 ppm</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
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<td>0.67</td>
<td>192.9</td>
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<tr>
<td>2,4-DNDPA</td>
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<td>2,2’ DNDPA</td>
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<td>1512.2</td>
<td>0</td>
<td>0.000</td>
</tr>
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</table>

## Avg. % Stabilizer for Lot

\[
\text{Avg. % Stabilizer for Lot} = \frac{\text{Sum of Concentrations}}{\text{Number of Stabilizers}} = 0.402
\]

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.40 %

**Analyst Signature**  
Stable YES Unstable

**Comments**  
CATEGORY: A

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001590
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 Sep 2012

**Other Information**  
M6 Propellant

**Sample Data**  
Solvent

| #1 | 0.50 g | 100 ml | ACN |

### Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
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<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td>Area</td>
<td>%</td>
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<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.889</td>
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<td>2,4-DNDPA</td>
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<td>12.757</td>
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</table>

**Avg. % Stabilizer for Lot:** 1.249

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.25%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 FEB 2011

### Other Information

- **Sample Data:** 
  - #1  
  - 0.5000 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Intg. Time</th>
<th>Intg. Area</th>
<th>Conc. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
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<td>4.156</td>
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<td>2540.4</td>
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<tr>
<td>2,2’ DNDPA</td>
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<td>10.987</td>
<td>1694.7</td>
<td>51.5</td>
<td>0.000</td>
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<tr>
<td>2,4’ DNDPA</td>
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<td>1272.3</td>
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<td>4NTPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
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<td>0.000</td>
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<tr>
<td>2NTPA</td>
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<td>13.939</td>
<td>5852.1</td>
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<td>15.022</td>
<td>1753.1</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>985.4</td>
<td>0.000</td>
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</table>

### Average % Stabilizer for Lot

- **2.875**

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

- **Mike Kile**

### Analyst Signature

- **Stable**

### Avg. Tot. Stabilizers

- **2.88 %**

### Comments

- **CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 AUG 2010

**Other Information**  
**Sample Data**  
- Solvent #1: 0.5000 g, 100 ml, ACN

**Standards (ERG-006)**

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (s)</th>
<th>Intg. Area 1 (Area)</th>
<th>Intg. Area %</th>
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</thead>
<tbody>
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<tr>
<td>4NDPA</td>
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<td>11.95</td>
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<td>2NDPA</td>
<td>50.0</td>
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**Avg. % Stabilizer for Lot:** 1.465

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.46 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPellant Stability Report

**Lot Number:** IND82L070178  
**Date of analysis:** 1 FEB 2011  
**Solvent:** #1 0.5000 g 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
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<tbody>
<tr>
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<td>365.7</td>
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**Avg. % Stabilizer for Lot:** 2.446

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Mike Kile**

**Avg. Tot. Stabilizers:** 2.45%

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 OCT 2010

**Other Information**  
**Sample Data**  
#1 0.5000 g  
**Solvent**  
100 ml ACN

**M6 Propellant**

<table>
<thead>
<tr>
<th>Standards (ERG-008)</th>
<th>Sample #</th>
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</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
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</tr>
<tr>
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</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:**  
**0.854**

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst Signature**: Kishe Dickerson  
**Avg. Tot. Stabilizers:**  
**0.85 %**

**Analyst**: Kishe Dickerson  
**Stable**: YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.
The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, by said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry at usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.
Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shippers No. 2879

Shipping Date 3/19/13

Purchase Order No.

Location No. 2321

Mail or Street Address of Consignee—For purposes of notification only:

Consigned to: Austin Powder Co.

Destination: 7-14-10 Wabash Rd

State: IL

County: Cook

Route: Customer No.

Charge Account:

Freight Charges: Collect Prepaid

EXP_001596

**SHIPPED**

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Pkg</td>
<td>No. of UNITS</td>
</tr>
</tbody>
</table>

**PROPER SHIPPING NAME AND HAZARD CLASS**

- UN0161, Powder, Smokeless, 1.3C, PG II

**REACHED**

- MAR 26 2013
- Austin Powder Co. East Camden PLant

**RECEIVED**

- 728-38-9577 728-38-9330

**EXEMPTION**

- DOT-E: EXPLOSIVES 1.3

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300 IN CANADA (ERF #2-0040) 800-561-3636 ELSEWHERE CALL (700) 527-9887

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By:

Date

Consignor

Authorizes receiver

CARRIER

Date

Per

Authorized or

DOT Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057

December 2022

019962
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-25-13

B/L# 2879 TRL 1810004

M-6

IND81D-070015 12 PTS
IND86E-070616 14 PTS
IND82D-070110  4 PTS
IND87B-070678 10 PTS
IND81K-070071  2 PTS
42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

35,280 lbs

LIONEL KOONS

EXPLO SYSTEMS INC
AUSTIN POWDER PACKING LIST

SHIPPMENT DATE 3-25-13

B/L# 2879 TRL 1810004

M-6

IND81D-070015  12 PTS
IND86E-070816  14 PTS
IND82D-070110  4 PTS
IND87B-070678  10 PTS
IND81K-070071  2 PTS
42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)
(Read Instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

2. CARRIER/GOVERNMENT ORGANIZATION

3. DATE/TIME OF INSPECTION

4. LOCATION OF INSPECTION

5. OPERATOR(S) NAME(S)

6. OPERATOR(S) LICENSE NUMBER(S)

7. MEDICAL EXAMINER’S CERTIFICATE

8. (X if satisfactory at origin)

   a. MILITARY HAZMAT ENDORSEMENT  
   b. VALID LEASE
   c. ROUTE PLAN

9. CVSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT

10. TYPE OF VEHICLE(S)

11. VEHICLE NUMBER(S)

12. PART INSPECTED

13. INSPECTION RESULTS (X one)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED JAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPOLIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 626 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 889

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
## SECTION I - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td>ACGIH TLV</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (if defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (if defined)</td>
</tr>
<tr>
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<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV none published</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flamable solid)</td>
<td>—</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV none published</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
**SECTION II - HAZARDS IDENTIFICATION**

![Hazards Identification Table]

- **PROPELLANT**
  - **HEALTH**: 2 2
  - **FLAMMABILITY**: 4
  - **PERSONAL PROTECTION**: [B]

**HAZARD INDEX**

- 4 = SEVERE HAZARD
- 3 = SERIOUS HAZARD
- 2 = MODERATE HAZARD
- 1 = SLIGHT HAZARD
- 0 = MINIMAL HAZARD

**PERSONAL PROTECTION INDEX**

- [A]  
- [B]  
- [C]  
- [D]  
- [E]  
- [F]  
- [G]  
- [H]  
- [I]  
- [J]  
- [K]  
- [L]  
- [M]  
- [N]  
- [O]  
- [P]  
- [Q]  
- [R]  
- [S]  
- [T]  
- [U]  
- [V]  
- [W]  
- [X]  

**Routes of Entry:** Inhalation; Skin; Ingestion

**Carcinogenicity:** None

**First Aid Measures:**
- **EYES** - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician.
- **SKIN** - Wash with soap and running water.
- **INGESTION** - Contact physician immediately.

**INHALATION** - Remove to fresh air. Treat irritation symptomatically; call physician.

**Firefighting Measures:** Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

**Unusual Fire/Explosion Hazard:** Easily ignited, highly combustible; protect from fire and sparks and extreme heat.

**Autoignition:** 383°F (195°C)

**Hazardous Combustion Products:** Oxides of Carbon

**Accidental Release Measures:**
- **SPILL** - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

**SECTION III - HANDLING AND STORAGE**

**Precautions:** Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

**Other Special Precautions:** Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.

**Ventilation:** Local and general ventilation necessary to keep air concentration below TLV's.

**Personal Protective Equipment:** Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

**SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES**

- **Specific Gravity:** 1.496
- **Evaporation Rate:** <1 (Butylacetate = 1)
- **Solubility in Water:** negligible
- **Appearance and Odor:** Hard Cylinder Perforated, Smooth, Greenish Yellow. Odorless.
- **Materials to Avoid:** Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER                      PRODUCT DESIGNATION/PART NUMBER
EX2010040603                           Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC PROPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number: IND86E070616</th>
<th>D533 / M6 propellant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of analysis:</td>
<td>Date: 19 NOV 2010</td>
</tr>
<tr>
<td>Sample Data:</td>
<td>Solvent</td>
</tr>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
<tr>
<td></td>
<td>100 ml ACN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc.</td>
</tr>
<tr>
<td></td>
<td>ppm</td>
</tr>
<tr>
<td>4,4'DNDA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'DNDA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4'DNDA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.504

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**: Kisha Dickerson

**Avg. Tot. Stabilizers**: 0.50 %

**Analyst Signature**

**Stable**: YES

**Unstable**

**Comments**: CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**Date of analysis:**

**DS33 / M6 propellant**  
**Date:** 27 JULY 2011

## Other Information

**Sample Data**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Conc. Intg.</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.694 112.8</td>
<td>437.7</td>
<td>0.388</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477 942.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.339 77.4</td>
<td>22925</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.842 1020.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NPA</td>
<td>50.0</td>
<td>9.392 1634.2</td>
<td>119.1</td>
<td>0.007</td>
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<tr>
<td>2NPA</td>
<td>50.0</td>
<td>10.693 2956.2</td>
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<td>0.005</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.201 5630.5</td>
<td>218.4</td>
<td>0.016</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103 1385.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.415

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42 %  
**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Lab. Supervisor Signature**

**Comments**

**CATEGORY:** A

**Actions to be Taken**

---

**Form #158**  
**Original Print Date:** 07/19/2010  
**019972**  
**EXP_001606**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81K070071  
**Date of analysis:** Date: 7 FEB 2012  
**D533 / M6 propellant**  
**Other Information**  
**Solvent**  
Sample Data  
#1  
0.50 g  
100 ml  
ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intg.</td>
</tr>
<tr>
<td></td>
<td>Area</td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.152

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers** 1.15 %  
**Analyst Signature**  
**Stable** YES | **Unstable**

**Lab. Supervisor Signature**  
**Comments** CATEGORY: A

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND81D070015  
**D533 / M6 propellant**  

**Date of analysis:**  
**Date:** 20 OCT 2010

## Other Information

**Sample Data**  
#1  
0.5000 g  
100 ml  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret (ppm)</th>
<th>Time (min)</th>
<th>Intg. (Area)</th>
<th>Conc. (Area %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2,6-DNDPA</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2NDPA</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Average % Stabilizer for Lot: 0.854

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.85 %

**Analyst Signature**  
**Stable:** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
**STRAIGHT BILL OF LADING**

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, is hereby acknowledged receipt of the property described. SHIPPER (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry a usual place of delivery of said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

<table>
<thead>
<tr>
<th>Shipper’s No.</th>
<th>2881</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Date</td>
<td>3/26/13</td>
</tr>
<tr>
<td>Purchase Order No.</td>
<td></td>
</tr>
<tr>
<td>Location No.</td>
<td>2301</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consignee</th>
<th>Fed Lic.</th>
<th>Exp. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination</td>
<td>State Lic.</td>
<td>Exp. Date</td>
</tr>
<tr>
<td>County</td>
<td>Customer No.</td>
<td></td>
</tr>
<tr>
<td>Route</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge Account of</td>
<td>Customer P.O. No.</td>
<td>Rel. No.</td>
</tr>
</tbody>
</table>

**SHIPPED**

<table>
<thead>
<tr>
<th>PROPER SHIPMENT NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
</tr>
</tbody>
</table>

**EXEMPTION DOT-E H M**

EXPLOSIVES 1.3

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT

IN THE USA CALL 800-424-8300 IN CANADA (ERP # 0040) 850-561-3638 ELSEWHERE CALL (703) 527-3867

Per

DOT Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057

(Shipper)

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By | Date |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSIGNEE</td>
<td></td>
</tr>
<tr>
<td>CARRIER</td>
<td></td>
</tr>
</tbody>
</table>

By | Date |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTHORIZED RECEIVER</td>
<td></td>
</tr>
</tbody>
</table>
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-26-13

B/L# 2881 TRL 17749

M-6

IND81D-070015   9 PTS
IND86E-070616   12 PTS
IND82D-070110   6 PTS
IND87B-070678   2 PTS
IND81K-070071   1 PTS
IND83K-070319   2 PTS
IND85F-070587   2 PTS
IND83M-070322   2 PTS
IND82H-070168   2 PTS
IND85D-070520   4 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35.280 LBS

[Signature]

LIONEL KOONS

EXPLO SYSTEMS INC
# MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

(Read Instructions before completing this form)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
</table>

## 2. CARRIER/GOVERNMENT ORGANIZATION

PELR

## 3. DATE/TIME OF INSPECTION

3/26/13

## 4. LOCATION OF INSPECTION

HONDO SYSTEMS INC

## 5. OPERATOR(S) NAME(S)

BURNETT, HEWITT

## 6. OPERATOR(S) LICENSE NUMBER(S)

1202543809 NO

## 7. MEDICAL EXAMINER’S CERTIFICATE

1-3/5

## B. (X if satisfactory at origin)

- a. MILITARY HAZMAT ENDORSEMENT
  - YES

## 9. CVSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT

- a. DRIVER’S VEHICLE INSPECTION REPORT
  - YES

## C. ROUTE PLAN

- a. COPY OF 49 CFR PART 397
  - YES

## D. TRAILER

- a. TRUCK/TRACTOR
  - NO

## II. MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

### 10. TYPE OF VEHICLE(S)

- a. TRACTOR/TRACTOR TRAILER/DRONE
  - YES

### 11. VEHICLE NUMBER(S)

- a. 17749

### 12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>k. EXHAUST SYSTEM</td>
</tr>
</tbody>
</table>

### 13. INSPECTION RESULTS (X one) ACCEPTED

- a. V

### 14. SATELLITE MOTOR SURVEILLANCE SYSTEM (X one)

- a. X

### 15. REMARKS

---

### 16. INSPECTOR SIGNATURE (Origin)

---

### 17. INSPECTOR SIGNATURE (Destination)

---

### III. POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>UNSAT</td>
</tr>
<tr>
<td>a. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR</td>
<td></td>
</tr>
<tr>
<td>b. LOAD PROPERLY SECURED TO PREVENT MOVEMENT</td>
<td></td>
</tr>
<tr>
<td>c. SEALS APPLIED TO CLOSED VEHICLE; TARPANIN APPLIED ON OPEN EQUIPMENT</td>
<td></td>
</tr>
<tr>
<td>d. PROPER PLACARDS APPLIED</td>
<td></td>
</tr>
<tr>
<td>e. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS</td>
<td></td>
</tr>
<tr>
<td>f. COPY OF DD FORM 828 FOR DRIVER</td>
<td></td>
</tr>
</tbody>
</table>

### 28. DRIVER(S) SIGNATURE (Origin)

---

### 29. DRIVER(S) SIGNATURE (Destination)

---
# EXPLO SYSTEMS, INC.

Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

## SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted

Technical Information Phone No.: 318.382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>PROPELLANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION [B]

Hazardous Materials Identification System

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>A</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td>B</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>C</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td>D</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
<td>E</td>
</tr>
</tbody>
</table>

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None

First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.

Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 385°F (195°C)

Hazardous Combustion Products: Oxides of Carbon

Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.

Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.

Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848

Page 1 of 1
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND86E070616

### D533 / M6 propellant

### Date of analysis: Date: 19 NOV 2010

### Other Information

- **M6 Propellant**
- **Sample Data**
  - **Solvent**
    - #1: 0.5000 g 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>717.3</td>
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<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.635</td>
<td>736.3</td>
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<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.713</td>
<td>779</td>
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</tr>
<tr>
<td>2NDP A</td>
<td>50.0</td>
<td>13.454</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
<td>4078.5</td>
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<td></td>
</tr>
<tr>
<td>N-NitrosodPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot: 0.504

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

- **Kisha Dickerson**

### Analyst Signature

### Avg. Tot. Stabilizers: 0.50 %

**Stable**: YES  Unstable

### Comments

**CATEGORY**: A

### Lab. Supervisor Signature

### Actions to be Taken

Form #158

019983

EXP_001617
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85D070520  
**D533 / M6 propellant**

**Date of analysis:**  
Date: 22 Dec 2010

**Other Information**

M6 Propellant

**Sample Data**

<table>
<thead>
<tr>
<th>Sample #</th>
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<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
<td>100 ml ACN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>4.041</td>
<td>1072.9</td>
<td></td>
<td></td>
<td>2745.6</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.403</td>
<td>1132.4</td>
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<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>11.071</td>
<td>1664.7</td>
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<td>59.9</td>
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<tr>
<td>2,4’ DNPA</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>14.156</td>
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<td>15.296</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>19.37</td>
<td>2345.7</td>
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<td></td>
<td>685</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.685

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

** Analyst:** Mike Kile  
** Analyst Signature**

**Avg. Tot. Stabilizers:** 2.69 %  
**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND85F070587

**D533 / M6 propellant**

**Date of analysis:**

**Sample Data**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M8 Propellant**

**Standards (ERG-005)**

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Conc. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDA</td>
<td>50.0</td>
<td>2.177</td>
<td>148.5</td>
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<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
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<td>2,2'-DNDA</td>
<td>50.0</td>
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<td>2,4'-DNPA</td>
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<td>4886.9</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td>0</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot: 1.262**

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson

**Avg. Tot. Stabilizers:** 1.26 %

**Analyst Signature**

**Stable:** YES | **Unstable:**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 JULY 2010

**Other Information**  
M6 Propellant

### Sample Data

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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<tbody>
<tr>
<td>4,4'-DNDA</td>
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<td>2.1</td>
<td>138.2</td>
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<td>283.8</td>
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<td>50.0</td>
<td>6.723</td>
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</tbody>
</table>

### Analyst

**MARTY**  
**Avg. Tot. Stabilizers:** 0.37%

### Analyst Signature

Stable | YES | Unstable

### Lab. Supervisor Signature

**Comments**  
**CATEGORY:** A

### Actions to be Taken

---

**0.30% or more is Stability Code A**  
**0.20% - 0.29% is Stability Code C**  
**Less than 0.20% is Stability Code D**

---

**Form #158**  
**Original Print Date: 07/19/2010**

**EXP_001620**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83K070319  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 15 JUNE 2012

## Other Information

- **Sample Data**
  - **Solvent:** ACN
  - **Sample #:** 1
  - **0.50 g**
  - **100 ml**

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
</tr>
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<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>3.401</td>
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<tr>
<td>2,2'DNDA</td>
<td>50.0</td>
<td>6.141</td>
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<tr>
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<td>50.0</td>
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<td>1639.5</td>
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<td>DPA</td>
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<td>75.0</td>
<td>12.44</td>
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## Sample #

<table>
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<th></th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
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<td></td>
</tr>
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<td>2,2'DNDA</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Avg. % Stabilizer for Lot

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. %</td>
<td>0.694</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst

- **Takisha Dickerson**

## Analyst Signature

- **Stable**
- **YES**
- **Unstable**

## Lab. Supervisor Signature

- **Comments**: CATEGORY: A

## Actions to be Taken

---

Form #158  
Original Print Date: 07/19/2010  
019987  
EXP_001621
# HPLC Propellant Stability Report

## Lot Number: IND82H070168

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>2540.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>31231.4</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>51.5</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>143.2</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
<td>0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>13.939</td>
<td>5852.1</td>
<td>838.5</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
<td>0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>985.4</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst: Mike Kile

## Analyst Signature

**Avg. Tot. Stabilizers:** 2.88%

**Stable:** YES  
**Unstable:**

**Comments:** 

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82D070110  
D533 / M6 propellant

Date of analysis:  
Date: 27 JULY 2011

**Other Information**  
M6 Propellant

**Sample Data**  
Solvent

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Int. Area 1</th>
<th>Int. Area %</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.842</td>
<td>1020.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
<td>1634.2</td>
<td>119.1</td>
<td>0.007</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.693</td>
<td>2956.2</td>
<td>134.9</td>
<td>0.005</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
<td>5630.5</td>
<td>218.4</td>
<td>0.016</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**  
0.415

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Mike Kile  
**Analyst Signature**

**Avg. Tot. Stabilizers**  
0.42 %  
**Stable**  
YES

**Comments**  
CATEGORY: A

**Actions to be Taken**

Form #158  
Original Print Date: 07/19/2010

019989  
EXP_001623
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81K070071  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 7 FEB 2012

### Other Information

**Sample Data**  
*Sample #: 1*  
**Solvent:** ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-DNDPA</td>
<td>50.0</td>
<td>0.883</td>
<td>50.1</td>
<td>541.1</td>
<td>1.080</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.336</td>
<td>893.6</td>
<td>14.7</td>
<td>0.002</td>
</tr>
<tr>
<td>2,2’-DNDPA</td>
<td>50.0</td>
<td>5.03</td>
<td>726.8</td>
<td>22818</td>
<td>0.000</td>
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<tr>
<td>2,4’-DNDA</td>
<td>50.0</td>
<td>7.182</td>
<td>1225.5</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.642</td>
<td>1532.1</td>
<td>73.1</td>
<td>0.005</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.759</td>
<td>2784.7</td>
<td>153.7</td>
<td>0.006</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.235</td>
<td>5480.9</td>
<td>820.7</td>
<td>0.060</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.979</td>
<td>1363.1</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Analyst

**TAKISHA DICKERSON**

**Avg. Tot. Stabilizers:** 1.15 %  
**Stable:** YES  
**Unstable:**

**Comments:**

**CATEGORY:** A  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 OCT 2010

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
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</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Intg.</td>
<td>Conc.</td>
<td></td>
</tr>
<tr>
<td>4,4'-DNPA</td>
<td>50.0</td>
<td>5.024</td>
<td>281.6</td>
<td>2363.4</td>
<td>0.839</td>
<td></td>
</tr>
<tr>
<td>2,4-DNPA</td>
<td>50.0</td>
<td>10.59</td>
<td>329.1</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2'-DNPA</td>
<td>50.0</td>
<td>12.176</td>
<td>376.1</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4'-DNPA</td>
<td>50.0</td>
<td>12.67</td>
<td>275.3</td>
<td>35.7</td>
<td>0.013</td>
<td></td>
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<tr>
<td>4NDA</td>
<td>50.0</td>
<td>13.632</td>
<td>664.1</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2NDA</td>
<td>50.0</td>
<td>14.943</td>
<td>1788.8</td>
<td>34.8</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.114</td>
<td>286.0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>19.917</td>
<td>329.9</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.854

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers** 0.85%

**Analyst Signature**

**Stable** YES  
**Unstable**

**Comments** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
## STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, by said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry in usual place of delivery of said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service jobs performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (b) in Uniform Freight Classification in effect on the date hereof. It this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

**Shipper's No.:** 2882

**At**

**By** PRIX

**Freight Charges: Collect**

**Prepaid**

**Location No.:** 231402

### (Mail or Street Address of Consignee — For purposes of notification only)

**Consignee:**

**Fed Lic.** 56-00436

**Exp. Date** 5/1/15

**Destination:** 71106<br>State<br>State Lic.

**Customer No.:**

**Bank:**

**Rel. No.:**

**Charge Account of:** 18070726 0000 0000 0086

**Customer P.O. No.:**

### (Proper Shipping Name and Hazard Class)

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EMERGENCY RESPONSE PROCEDURE CODE NO.</th>
<th>EXEMPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>144</td>
<td>120</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>254</td>
<td>138</td>
<td>112</td>
<td>6:10-5:9</td>
</tr>
</tbody>
</table>

### (Placards Applied to Railcar or Motor Vehicle)

- **EXPLOSIVES 1.3**

### (Other Information)

- **Truck No.:** 66436
- **Mobile:** 7110077
- **Mileage:**
- **Total Weight:** 253 150
- **Gross:**
- **Weight:** 73 000
- **Net Explosive Weight:** 58 730

---

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Signature:**

**Invoice No.:**

**For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident Call Chemicaltac — Day or Night**

IN THE USA CALL 800-424-9392 IN CANADA (ERP-424-9392) 800-667-3636 ELSEWHERE CALL (703) 527-9887

**Received By:**

**Q CONSIGNEE Q CARRIER**

**Date:**

**By:**

**AUTHORIZED RECEIVER**

---

019992

**Per:**

**:Is DOT Hazardous Material Handling Number**

Local Federal Explosives License No. 5-LA-119-20-1A-00057

(Shipper)

---

**CONTAINS HAZARDOUS MATERIALS**

EXP_001626
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-27-13

B/L# 2882 TRL 7810099

M-6

IND81D-070015  6 PTS
IND82D-070110  4 PTS
IND87B-070678  10 PTS
IND81K-070071  3 PTS
IND83K-070319  3 PTS
IND83M-070322  2 PTS
IND85D-070520  8 PTS
IND82H-070167  1 PT
IND83F-070276  2 PTS
IND86E-070616  2 PTS
IND81F-070024  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER: 2662

SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. CARRIER/GOVERNMENT ORGANIZATION: REVR

3. DATE/TIME OF INSPECTION: 3/07/13

4. LOCATION OF INSPECTION: CYPHO SYSTEMS INC.

5. OPERATOR(S) NAME(S): Peresett, J. West

6. OPERATOR(S) LICENSE NUMBER(S): E2015453457

7. MEDICAL EXAMINER'S CERTIFICATE*: 11/3/15

8. (X if satisfactory at origin)

   a. MILITARY HAZMAT ENDORSEMENT
   b. VALID LEASE* a. DRIVER'S VEHICLE INSPECTION REPORT*
   c. ROUTE PLAN 1. COPY OF 49 CFR PART 387

   b. TRAILER

   c. TRUCK OR TRACTOR

SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE(S)

<table>
<thead>
<tr>
<th>TRACTOR/ TRAILER/ DROM</th>
<th>DROM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. PART INSPECTED (X as applicable) ORIGIN (1) DESTINATION (2) ORIGIN (1) DESTINATION (2) COMMENTS (3)

   a. SPARE ELECTRICAL FUSES
   b. HORN OPERATIVE
   c. STEERING SYSTEM
   d. WINDSHIELD WIPERS
   e. MIRRORS
   f. WARNING EQUIPMENT
   g. FIRE EXTINGUISHERS* a. EXHAUST SYSTEM
   h. GEAR LINKAGE
   i. SUSPENSION
   j. COUPLING DEVICES
   k. CARBO SPACE
   l. TAILGATE/DOORS*
   m. TIRES, WHEELS, RIMS
   n. ELECTRICAL WIRING
   o. LIGHTS AND REFLECTORS
   p. TARPULIN
   q. OTHER (Specify)

13. INSPECTION RESULTS (X one) ACCEPTED ✓ REJECTED

   (If rejected give reason under Remarks. Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED ✓ REJECTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPULIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 838 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 826 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
### MATERIAL SAFETY DATA SHEET

#### PROPPELLANT (Wetted)

#### SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted  
Technical Information Phone No.: 318-382-8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL ACGIH TLV EPA RQ (if defined) DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³ ACGIH TLV 5 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>--</td>
<td>87.00</td>
<td>OSHA PEL none published ACGIH TLV none published EPA RQ (none defined) DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³ ACGIH TLV 10 mg/m³ EPA RQ 10 lbs DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

HAZARD INDEX
4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritant symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (24°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV’s.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explo.com
CLASSIFICATION OF EXPLOSIVES.
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging – UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
EXPLOSIVE HIGHWAY ROUTE PLAN

DATE: 3/27/3

TRUCK #: 6136      TRAILER #: T810099      WORK ORDER #: 215339      B/L #: 2882


HIGHWAY ROUTES

LA, LOCAL, I20, NY 79, NY 9, NY 167

LA, NY 167, NY 279, LOCAL

NOTE: The above information is to be completed before leaving the shipper. This form is to be retained with your Bill of Lading until delivery is made.

DRIVER SIGNATURE: 1. [Signature]

DRIVER SIGNATURE: 2. [Signature]
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 12 APR 2012  
**Sample Data**  
**Solvent #1**  
**0.50 g**  
**100 ml**  
**ACN**

## M6 Propellant Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Time</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
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<tr>
<td>2,4-DNDPA</td>
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<td>3.244</td>
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<td>3426.7</td>
<td>3662.4</td>
<td>22442</td>
<td>0.000</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>4.803</td>
<td>1061.1</td>
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<td>0.000</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>10.968</td>
<td>1530.7</td>
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<td>0</td>
<td>0</td>
<td>0.000</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Average % Stabilizer for Lot

2.112

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 2.11 %  
**Analyst Signature**  
**Stable** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83K070319  
**D533 / M6 propellant**  
**Date of analysis:** Date: 1 FEB 2011

### Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
</tbody>
</table>

### M6 Propellant Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc.</th>
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<tbody>
<tr>
<td>4,4'-DNDPA</td>
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<td>4.156</td>
<td>1116</td>
<td>2244</td>
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<tr>
<td>2,4-DNDPA</td>
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<td>9.388</td>
<td>1191.2</td>
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<td>2,2'-DNDPA</td>
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<td>10.987</td>
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<td>50.0</td>
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<td>5852.1</td>
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<td>0.010</td>
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<td>DPA</td>
<td>200.0</td>
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<td>1753.1</td>
<td>319.5</td>
<td>0.073</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>438.3</td>
<td>0.000</td>
</tr>
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### Avg. % Stabilizer for Lot

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. % Stabilizer for Lot</td>
<td>2.476</td>
</tr>
</tbody>
</table>

- 0.30% or more is Stability Code A  
- 0.20% - 0.29% is Stability Code C  
- Less than 0.20% is Stability Code D

### Analyst

- **Mike Kile**
  - **Avg. Tot. Stabilizers:** 2.48%
  - **Comments:** CATEGORY: A
  - **Actions to be Taken:**

### Analyst Signature

- Stable: YES  
- Unstable

### Lab. Supervisor Signature
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**Date of analysis:**  
**D533 / M6 propellant**  
**Date:** 4 Sep 2012  
**Other Information:**  
Sample Data  
Sample #1  
0.50 g  
100 ml  
ACN  
M6 Propellant  

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret Time</td>
</tr>
<tr>
<td>ppm</td>
<td>Area 1</td>
</tr>
<tr>
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<td>50.0</td>
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<td>DPA</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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</table>

| Avg. % Stabilizer for Lot | 1.249 |

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

<table>
<thead>
<tr>
<th>Analyst</th>
<th>Mike Kile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Signature</td>
<td>Avg. Tot. Stabilizers</td>
</tr>
<tr>
<td>Comments</td>
<td>1.25 %</td>
</tr>
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| Lab. Supervisor Signature | CATEGORY: | A |
|---------------------------|-----------|
| Actions to be Taken | | |
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070167  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 JAN 2012

**Sample Data**  
**Solvent**

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml</td>
<td>ACN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
<td>308.2</td>
<td>0.259</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
<td>23824</td>
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<td>2,4' DNDPA</td>
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<td>7.018</td>
<td>1103.9</td>
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<td>8.439</td>
<td>1782.5</td>
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<td>0.003</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
<td>79.6</td>
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<td>10.956</td>
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<td>11.669</td>
<td>1532.4</td>
<td>0</td>
<td>0.000</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.349

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.35%

**Analyst Signature**  
**Stable**: YES  
**Unstable**:  

**Lab. Supervisor Signature**  
**Category:**  
**A**  

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82D070110  
**Date of analysis:** Date: 27 JULY 2011  
**Other Information**  
M6 Propellant  

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Stabilizer | Conc. Ret Time Area 1 | Intg. | Conc. Area % |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0 0.694 112.8</td>
<td>437.7</td>
<td>0.388</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0 3.477 942.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0 5.339 77.4</td>
<td>22925</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0 7.842 1020.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 9.392 1634.2</td>
<td>119.1</td>
<td>0.007</td>
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<td>2NDPA</td>
<td>50.0 10.693 2956.2</td>
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<td>DPA</td>
<td>200.0 12.201 5630.5</td>
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<tr>
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<td>75.0 13.103 1385.2</td>
<td>0</td>
<td>0.000</td>
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</table>

Avg. % Stabilizer for Lot: 0.415

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst
**Mike Kile**  
**Avg. Tot. Stabilizers:** 0.42 %  
**Analyst Signature**  
**Stable:** YES  
**Unstable:**  
**Comments**  
**CATEGORY:** A  
**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81F070024  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 9 DEC 2011

### Other Information
- **Sample Data**
  - Sample #: 1
  - Concentration: 0.50 g
  - Volume: 100 ml
  - Solvent: ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<td>1747.7</td>
<td>46.9</td>
<td>0.003</td>
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<td>9.803</td>
<td>3112</td>
<td>109.9</td>
<td>0.004</td>
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<td>DPA</td>
<td>200.0</td>
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<td>604.1</td>
<td>0.040</td>
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<td>N-NitrosodPA</td>
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<td>12.035</td>
<td>1482.1</td>
<td>0</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.582

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.58 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Lab. Supervisor Signature**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81K070071  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 7 FEB 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tbody>
<tr>
<td>#1</td>
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</table>

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
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<td>11.979</td>
<td>1363.1</td>
<td>0</td>
<td>0.000</td>
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</table>

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

Average % Stabilizer for Lot: 1.152

---

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
1.15 %

**Analyst Signature**  
Stable YES | Unstable

**Lab. Supervisor Signature**

**Comments**

CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 OCT 2010

**Other Information**  
Sample Data  
Solvent  
#1 0.5000 g  
100 ml ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc. Ret</td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4'DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4'DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

| Avg. % Stabilizer for Lot | 0.854 |

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
0.85%

**Analyst Signature**  
Stable YES Unstable

**Lab. Supervisor Signature**  
Comments  
**CATEGORY:** A

**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 NOV 2010

**Other Information**  
**Solvent**  
Sample Data  
#1  0.5000 g  100 ml  ACN

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>717.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.635</td>
<td>736.3</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>11.713</td>
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<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>13.454</td>
<td>462.4</td>
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<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>15.161</td>
<td>1164.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
<td>4078.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
<td></td>
<td></td>
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</table>

**Avg. % Stabilizer for Lot:** 0.504

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85D070520  
**D533 / M6 propellant**

**Date of analysis:** Date: 22 Dec 2010

**Other Information**
M6 Propellant

**Sample Data**  
**Solvent #1:** 0.5000 g  
**100 ml ACN**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDA</td>
<td>50.0</td>
<td>4.041</td>
<td>1072.9</td>
<td></td>
<td>2745.6</td>
</tr>
<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>9.403</td>
<td>1132.4</td>
<td></td>
<td>27280.8</td>
</tr>
<tr>
<td>2,2'-DNDA</td>
<td>50.0</td>
<td>11.071</td>
<td>1654.7</td>
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<td>59.9</td>
</tr>
<tr>
<td>2,4'-DNDA</td>
<td>50.0</td>
<td>11.863</td>
<td>1176.6</td>
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<td>121</td>
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<td>4NDA</td>
<td>50.0</td>
<td>12.612</td>
<td>2267.7</td>
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<td>2NDA</td>
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<td>14.156</td>
<td>6085.2</td>
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<td>565.1</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>15.296</td>
<td>1602.1</td>
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</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>19.37</td>
<td>2345.7</td>
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<td>585</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.685

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.69%

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, on said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry in usual place of delivery of said destination, on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service lobe performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect __ Prepaid __

Shipper's No. 2880

Shipping Date

Purchase Order No.

Location No.

Consigned to

(Mail or Street Address of Consignee — For purposes of notification only)

Destination

Fed Lic.

Exp. Date

State

State Lic.

Exp. Date

County

Customer No.

Route

Charge Account of

Customer P.O. No.

Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED No. of PKS</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PKS</th>
<th>RETURNED No. of UNITS</th>
<th>EMERGENCY RESPONSE PROTOCOL GUIDE No.</th>
<th>EXEMPTION DOT-E</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td>EXPOLOSIVES 1.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-6500 IN CANADA (ERP) 205-661-3636 ELSEWHERE CALL (730) 927-3887

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

CONSIGNEE CARRIER

Date

By

AUTHORIZED RECEIVER

Signature

Permanent Address of Shipper:
Explo Systems, Inc.
400 Java Road
Minden, Louisiana 71055
Phone: 318-670-0000

Per

DOT Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057

(Shipper)
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-26-13

B/L# 2880 TRL 6810057

M-6

IND81D-070015  4 PTS
IND86E-070616  23 PTS
IND82D-070110  2 PTS
IND87B-070678  2 PTS
IND81K-070071  1 PTS
IND83K-070319  4 PTS
IND82H-070167  4 PTS
IND81L-070073  2 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER: 2F6C

SECTION I - DOCUMENTATION

2. CARRIER/GOVERNMENT ORGANIZATION: ZEUK

3. DATETIME OF INSPECTION: 3/20/13

4. LOCATION OF INSPECTION: Explo Systems Inc

5. OPERATOR(S) NAME(S): F. H. Miller

6. OPERATOR(S) LICENSE NUMBER(S): 136 6144 TY

7. MEDICAL EXAMINER'S CERTIFICATE: 12/16/14

8. (X if satisfactory at origin)
   a. MILITARY HAZMAT ENDORSEMENT: YES
   b. VALID LEASE*: YES
   c. ROUTE PLAN: YES

9. CVSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT*: NO
   a. DRIVER'S VEHICLE INSPECTION REPORT*: NO
   b. TRUCK/TRACTOR*: YES
   c. TRAILER: NO

SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE(S): TRACTOR/TRACTOR DRUM

11. VEHICLE NUMBERS:
    TPAC: 6'177/10'177/10'005'7

12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th></th>
<th>ORIGIN (1)</th>
<th>DESTINATION (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>k. EXHAUST SYSTEM</td>
<td></td>
</tr>
<tr>
<td>b. HORN OPERATIVE</td>
<td>l. BRAKE SYSTEM</td>
<td></td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td>m. SUSPENSION</td>
<td></td>
</tr>
<tr>
<td>d. WINDSHIELD/WIPERS</td>
<td>n. COUPLING DEVICES</td>
<td></td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td>o. CARGO SPACE</td>
<td></td>
</tr>
<tr>
<td>f. WARNING EQUIPMENT</td>
<td>p. LANDING GEAR*</td>
<td></td>
</tr>
<tr>
<td>g. FIRE EXTINGUISHER*</td>
<td>q. TIRES, WHEELS, RAMS</td>
<td></td>
</tr>
<tr>
<td>h. ELECTRICAL WIRING</td>
<td>r. TAILGATE/DOORS*</td>
<td></td>
</tr>
<tr>
<td>i. LIGHTS AND REFLECTORS</td>
<td>s. TARPAULIN*</td>
<td>X</td>
</tr>
<tr>
<td>j. FUEL SYSTEM*</td>
<td>t. OTHER (Spa)</td>
<td></td>
</tr>
</tbody>
</table>

13. INSPECTION RESULTS (X one accepted, rejected)
   (If rejected give reason under Remarks. Equipment will be approved if deficiencies are corrected prior to loading.)
   X

14. SATELITE MOTOR SURVEILLANCE SYSTEM: (X one) ACCEPTED

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEPARATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPAULIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 838 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 826 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055  

MATERIAL SAFETY DATA SHEET  

PROPELLANT (Wetted)  

SECTION 1 - PRODUCT IDENTIFICATION  

PRODUCT NAME: Propellant, Explosive, Solid, Wetted  

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).  

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (if defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (if defined)</td>
</tr>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ 10 lbs</td>
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<tr>
<td>Diphenylamine</td>
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<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
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<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
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<td>2.00</td>
<td>OSHA PEL none published</td>
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<td>ACGIH TLV none published</td>
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<td></td>
<td>EPA RQ (none defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>-</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
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<td></td>
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<td>ACGIH TLV none published</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 2</td>
<td>4</td>
<td>4</td>
<td>[B]</td>
</tr>
</tbody>
</table>

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX
- 4 = SEVERE HAZARD
- 3 = SERIOUS HAZARD
- 2 = MODERATE HAZARD
- 1 = SLIGHT HAZARD
- 0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:  
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER: EX2010040603  
PRODUCT DESIGNATION/PART NUMBER: Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned: 
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant. 
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie  
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 19 NOV 2010

**Other Information**  
M6 Propellant

**Sample Data**  
Solvent: 
#1 0.5000 g 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. %</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
<td>654.4</td>
<td>0.482</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>717.3</td>
<td>0</td>
<td>0.000</td>
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<td>2,2'-DNDA</td>
<td>50.0</td>
<td>7.635</td>
<td>736.3</td>
<td>13022.2</td>
<td>0.000</td>
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<td>50.0</td>
<td>11.713</td>
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<td>4NDPA</td>
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<td>15.161</td>
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<td>0.000</td>
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<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
<td>4078.5</td>
<td>221.2</td>
<td>0.022</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.504

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**  
Stable: YES  
Unstable: 

**Lab. Supervisor Signature**  
Comments: CATEGORY: A  
Actions to be Taken:
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83K070319  
**D533 / M6 propellant**

**Date of analysis:**  1 FEB 2011

## Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Ret Time</th>
<th>ppm</th>
<th>Intg.</th>
<th>Area (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 100 ml ACN</td>
<td>0.5000 g</td>
<td>001</td>
<td>4.786</td>
<td>173.0</td>
</tr>
</tbody>
</table>

## Solvent

<table>
<thead>
<tr>
<th>Solvent</th>
<th>ppm</th>
<th>Intg.</th>
<th>Area (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACN</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area (%)</th>
</tr>
</thead>
<tbody>
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<td>50.0</td>
<td>4.156</td>
<td>1116</td>
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<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>26030.5</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>71.6</td>
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<td>50.0</td>
<td>11.73</td>
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<td>2443.3</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>13.939</td>
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<td>562.5</td>
</tr>
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<td>DPA</td>
<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
<td>319.5</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>438.3</td>
</tr>
</tbody>
</table>

## Analysis Results

- **Avg. % Stabilizer for Lot**: 2.476
- **Avg. Tot. Stabilizers**: 2.48 %

### Analyst
- **Mike Kile**

### Comments
- **Stable**: YES
- **Unstable**: NO
- **CATEGORY**: A

### Actions to be Taken

---

*Form #158  
Original Print Date: 07/19/2010*
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070167  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 JAN 2012

**Other Information**  
M6 Propellant

## Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. (Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
</tr>
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<td>7.018</td>
<td>1103.9</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
</tr>
<tr>
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<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
</tr>
<tr>
<td>2NDPA</td>
<td>200.0</td>
<td>10.966</td>
<td>6219.8</td>
</tr>
<tr>
<td>DPA</td>
<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>100</td>
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<td></td>
</tr>
</tbody>
</table>

**Solvent**  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. (Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.65</td>
<td>119.1</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.304</td>
<td>1019.8</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>4.943</td>
<td>1734.6</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.018</td>
<td>1103.9</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.439</td>
<td>1782.5</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.513</td>
<td>3182.1</td>
</tr>
<tr>
<td>DPA</td>
<td>50.0</td>
<td>10.966</td>
<td>6219.8</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.669</td>
<td>1532.4</td>
</tr>
</tbody>
</table>

**Intg.**  
0.349

**Avg. % Stabilizer for Lot**  
0.349

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.35%

**Analyst Signature**

**Stable**  
YES

**Unstable**

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82D070110
D533 / M6 propellant
Date of analysis:
Date: 27 JULY 2011

Other Information
M6 Propellant
Sample Data
Solvent
#1 0.50 g 100 ml ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>ppm Time Area 1</td>
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<tr>
<td>4,4' DNDPA</td>
<td>50.0 0.694 112.8</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0 3.477 942.8</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0 6.339 77.4</td>
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<td>2,4' DNDPA</td>
<td>50.0 7.842 1020.3</td>
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<td>4NDPA</td>
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<td>50.0 10.693 2956.2</td>
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<td>DPA</td>
<td>200.0 12.201 5630.5</td>
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<td>N-NitrosoDPA</td>
<td>75.0 13.103 1385.2</td>
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Avg. % Stabilizer for Lot: 0.415

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Mike Kile
Analyst Signature
Avg. Tot. Stabilizers: 0.42%
Stable: YES
Comments: CATEGORY: A

Lab. Supervisor Signature
Actions to be Taken

Form #158
Original Print Date:07/19/2010
020022
EXP_001656
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070073  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 29 JULY 2011

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
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<tbody>
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</tr>
<tr>
<td></td>
<td>100 ml</td>
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<tr>
<td></td>
<td>ACN</td>
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**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4’-DNPhA</td>
<td>50.0</td>
<td>0.642</td>
<td>125.1</td>
<td>608.3</td>
<td>0.485</td>
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<tr>
<td>2,4-DNPhA</td>
<td>50.0</td>
<td>3.455</td>
<td>992.3</td>
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<td>2,2’-DNPhA</td>
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<td>5.274</td>
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**Avg. % Stabilizer for Lot:** 0.520

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.52 %

## Analyst Signature

**Stable:** YES  
**Unstable:**

## Comments

**CATEGORY:** A

**Actions to be Taken**

---

**Form #150**

020023  
EXP_001657
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81K070071  
**D533 / M6 propellant**

**Date of analysis:** Date: 7 FEB 2012

**Other Information**
- M6 Propellant
- Sample Data: 
  - Solvent: #1
  - Sample weight: 0.50 g
  - Volume: 100 ml
  - Solvent: ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Sample #</th>
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<tbody>
<tr>
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<td>73.1</td>
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<table>
<thead>
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<th>Intg.</th>
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<td>0.005</td>
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</table>

| Avg. % Stabilizer for Lot | 1.152 |

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers** 1.15 %

**Analyst Signature**  
**Stable** YES Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND81D070015  
**Date of Analysis:** Date: 20 OCT 2010  
**Solvent:** #1 0.5000 g 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
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<th></th>
</tr>
</thead>
<tbody>
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<td>0.000</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>14.943</td>
<td>1788.8</td>
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<td>0.002</td>
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<td>200.0</td>
<td>16.114</td>
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<td>75.0</td>
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<td>0.000</td>
</tr>
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</table>

| Avg. % Stabilizer for Lot | 0.854 |

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.85 %

**Stable**  
**YES Unstable**

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
### STRAIGHT BILL OF LADING

**RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.**

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, is to be delivered to the usual place of delivery of said destination. It shall be delivered on its route, or to another carrier on the route to said destination, if mutually agreed, to each of the said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service lobe performed hereunder shall be subject to all terms and conditions of the Uniform Domestico Straight Bill of Lading Set forth in Uniform Freight Classification in effect on the date hereon, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

**Shipper:** Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055

**Freight Charges:** Collect  
Prepaid

**Consigned to:**  
**Destination:**  
**State:**  
**Fed Lic.**  
**Exp. Date:**

**County:**  
**State Lic.:**  
**Exp. Date:**

**Route:**  
**Customer No.:**

**Charge Account of:**  
**Customer P.O. No.:**  
**Rel. No.:**

---

**SHIPped**  
**SHIPPED**  
**No. of PKGs**  
**No. of UNITS**  
**PROPER SHIPPING NAME AND HAZARD CLASS**  
**RETURNED**  
**No. of PKGS**  
**RETURNED**  
**No. of UNITS**  
**EMERGENCY RESPONSE PROCEDURE GUIDE NO.:**

| UN0161, Powder, Smokeless, 1.3C, PG II | #112 | EXPLOSIVES 1.3 |

---

**RECEIVED**  
**MAR 28 2013**

**AUSTRALIAN POWDER COMPANY**  
**EAST CAMDEN PLANT**

---

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Signature:**

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMREC — DAY OR NIGHT**

**PERMANENT ADDRESS OF SHIPPER:**  
Explo Systems, Inc.  
1600 Java Road  
Minden, Louisiana 71055  
J: 382-8700

**I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.**

**Revised by:**  
**Date:**

**Printed by:**  
**Date:**

---

**CONTAINS HAZARDOUS MATERIALS**

---

**020026**

**EXP_001660**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-27-13

B/L# 2884 TRL 17749

M-6

IND81D-070015  4 PTS
IND83F-070276  8 PTS
IND86E-070616  13 PTS
IND81F-070024  2 PTS
IND81G-070061  4 PTS
IND85F-070587  1 PT
IND83E-070273  3 PTS
IND83M-070322  2 PTS
IND84G-070326  2 PTS
IND81L-070072  3 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

35,280 lbs

LIONEL KOONS

EXPLO SYSTEMS INC
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-27-13

B/L# 2884 TRL 17749

M-6

IND81D-070015  4 PTS
IND83F-070276  8 PTS
IND86E-070616  13 PTS
IND81F-070024  2 PTS
IND81G-070061  4 PTS
IND85F-070587  1 PT
IND83E-070273  3 PTS
IND83M-070322  2 PTS
IND84G-070326  2 PTS
IND81L-070072  3 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
**Motor Vehicle Inspection (Transporting Hazardous Materials)**

(Read instructions before completing this form.)

**This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.**

1. **Bill of Lading/Transportation Control Number**: 2644

**Section 1 - Documentation**

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **Carrier/Government Organization**: RECK

3. **Date/Time of Inspection**: 3/27/13

4. **Location of Inspection**: EXDO SYSTEMS, INC.

5. **Operator(S) Name(S)**: Tony, Anthony

6. **Operator(S) License Number(S)**: 13L31144T8

7. **Medical Examiner's Certificate**: 12/10/14

8. (X if satisfactory at origin)

9. **Military Hazmat Endorsement**: YES

10. **Valid Lease**: DRIVER'S VEHICLE INSPECTION REPORT

11. **Route Plan**: COPY OF 49 CFR PART 397

**Section II - Mechanical Inspection**

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. **Type of Vehicle(S)**

   - TRACTOR/TRACTOR TRAILER/DORM/TRANSPORTER

   - TRAILER

   - CRAWLER TYPE

11. **Vehicle Numbers**

   - TYPE 1: 6177

   - TYPE 2: TRUCK TRAILER 17749

12. **Part Inspected**

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT UNSAT SAT UNSAT</td>
<td>SAT UNSAT SAT UNSAT</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Spare Electrical Fuses</td>
<td>k. Exhaust System</td>
</tr>
<tr>
<td>b. Horn Operative</td>
<td>l. Brake System</td>
</tr>
<tr>
<td>c. Steering System</td>
<td>m. Suspension</td>
</tr>
<tr>
<td>d. Windshield/Wipers</td>
<td>n. Coupling Devices</td>
</tr>
<tr>
<td>e. Mirrors</td>
<td>o. Cargo Space</td>
</tr>
<tr>
<td>f. Warning Equipment</td>
<td>p. Landing Gear</td>
</tr>
<tr>
<td>g. Fire Extinguisher*</td>
<td>q. Tires, Wheels, Rims</td>
</tr>
<tr>
<td>h. Electrical Wiring</td>
<td>r. Tailgate/Doors</td>
</tr>
<tr>
<td>i. Lights and Reflectors</td>
<td>s. Tarpaulin</td>
</tr>
<tr>
<td>j. Fuel System*</td>
<td></td>
</tr>
</tbody>
</table>

13. **Inspection Results**

   - Accepted

   - Rejected

   (If rejected give reason under “Remarks”. Equipment will be approved if deficiencies are corrected prior to loading.)

14. **Satellite Motor Surveillance System**

   - Accepted

   - Rejected

15. **Remarks**

16. **Inspector Signature (Origin)**

17. **Inspector Signature (Destination)**

**Section III - Post Loading Inspection**

This section applies to commercial and government/military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. **Loaded IAW Applicable Segregation/Compatibility Table of 49 CFR**

19. **Load Properly Secured to Prevent Movement**

20. **Seals Applied to Closed Vehicle; Tarpaulin Applied to Open Equipment**

21. **Proper Placards Applied**

22. **Shipping Papers/DD Form 888 for Government Vehicle Shipments**

23. **Copy of DD Form 825 for Driver**

24. **Shipped Under DOT Special Permit 866**

25. **Inspector Signature (Origin)**

26. **Driver(S) Signature (Origin)**

27. **Inspector Signature (Destination)**

28. **Driver(S) Signature (Destination)**
# Material Safety Data Sheet

**PROPELLANT (Wetted)**

## Section 1 - Product Identification

**Product Name:** Propellant, Explosive, Solid, Wetted

Technical Information Phone No.: 318 382 8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (if defined)</td>
<td>DOT RQ (if defined)</td>
</tr>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
</tr>
<tr>
<td>(flammable solid)</td>
<td></td>
<td></td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

Hazardous Materials Identification System

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>A</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td>B</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>C</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td>D</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
<td>E</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE
Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES
Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explo systems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

**U.N. PROPER SHIPPING NAME AND NUMBER:**
Powder, smokeless, UN0161

**U.N. CLASSIFICATION CODE:** 1.3C

**REFERENCE NUMBER**
EX2010040603

**PRODUCT DESIGNATION/PART NUMBER**
Reclaimed M6 Propellant

**NOTES:** This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

**DATED:** 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
EXPLOSIONS - DIVISION 1.1, 1.2, 1.3, 1.5 OR 1.6, CLASS A OR B

GUIDE

112

EMERGENCY RESPONSE

FIRE

CARGO FIRE

• DO NOT fight fire when fire reaches cargo! Cargo may EXPLODE!
• Stop all traffic and clear the area for at least 1600 meters (1 mile) in all directions and let burn.
• Do not move cargo or vehicle if cargo has been exposed to heat.

TIRE OR VEHICLE FIRE

• Use plenty of water - FLOOD it! If water is not available, use CO₂ dry chemical or dirt.
• If possible, and WITHOUT RISK, use unmanned hose holders or monitor nozzles from maximum distance to prevent fire from spreading to cargo area.
• Pay special attention to tire fires as re-ignition may occur. Stand by with extinguisher ready.

SPILL OR LEAK

• ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
• All equipment used when handling the product must be grounded.
• Do not touch or walk through spilled material.
• DO NOT OPERATE RADIO TRANSMITTERS WITHIN 100 meters (330 feet) OF ELECTRIC DETONATORS.
• DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

FIRST AID

• Move victim to fresh air. Call 911 or emergency medical service.
• Give artificial respiration if victim is not breathing.
• Administer oxygen if breathing is difficult.
• Remove and isolate contaminated clothing and shoes.
• In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
• Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

* For information on "Compatibility Group" letters, refer to the Glossary section.
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:** Date: 19 Nov 2010

**Other Information**

- **Sample Data**
  - Solvent: 
    - **#1:** 0.5000 g  
    - **100 ml:** ACN

**M6 Propellant**

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-DNDPA</td>
<td>50.0</td>
<td>2.068</td>
<td>135.8</td>
<td>654.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>717.3</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2’-DNDPA</td>
<td>50.0</td>
<td>7.635</td>
<td>736.3</td>
<td>13022.2</td>
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<tr>
<td>2,4’-DNPA</td>
<td>50.0</td>
<td>11.713</td>
<td>779</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
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<td>13.454</td>
<td>462.4</td>
<td>0.000</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>15.161</td>
<td>1164.1</td>
<td>0.000</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
<td>4078.5</td>
<td>221.2</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.504

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**

**Form #15A**

020035

EXPIRED DATE 31 DEC 2011

EXP_001669
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070587  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 25 AUG 2010

**Sample Data**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Amount</th>
<th>Volume</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
<td>100 ml</td>
<td>ACN</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
<td>1821.4</td>
<td>1.243</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14427.7</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
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<td>4886.9</td>
<td>225</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Average % Stabilizer for Lot

**1.262**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 1.26%

**Analyst Signature**

**Stable**  
YES | Unstable

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

---

**Form #158**

**Original Print Date:** 07/19/2010

EXP_001670
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND84G070326
D533 / M6 propellant

Date of analysis: Date: 3 MAY 2012

Other
Information
M6 Propellant

Sample Data
Solvent
#1 0.50 g 100 ml ACN

Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
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<td>324.4</td>
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<td>2,4-DNDPA</td>
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<td>3.335</td>
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<td>5.007</td>
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<td>23068</td>
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<td>2,4′ DNDPA</td>
<td>50.0</td>
<td>7.137</td>
<td>1206.9</td>
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<td>0</td>
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<td>87.1</td>
<td>0.004</td>
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<td>9.688</td>
<td>3527.8</td>
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<td>151.4</td>
<td>0.004</td>
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<tr>
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<td>200.0</td>
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<td>785.8</td>
<td>0.045</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>11.897</td>
<td>1704.5</td>
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<td>0.364</td>
<td></td>
<td></td>
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</table>

Avg. % Stabilizer for Lot 0.364

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst Takisha Dickerson

Analyst Signature

Avg. Tot. Stabilizers 0.36 %

Stable YES Unstable

Comments CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

**Date of analysis:** 23 JULY 2010

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
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<td>2.1</td>
<td>138.2</td>
<td>0.251</td>
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<td>2,4-DNDPA</td>
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<td>4.911</td>
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<td>50.0</td>
<td>6.723</td>
<td>453.3</td>
<td>0.000</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
<td>9.11</td>
<td>1583.4</td>
<td>0.000</td>
</tr>
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<td>4NDPA</td>
<td>50.0</td>
<td>10.528</td>
<td>2068.9</td>
<td>0.000</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>11.725</td>
<td>3520.6</td>
<td>0.000</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>13.111</td>
<td>6312.2</td>
<td>0.000</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.888</td>
<td>1967</td>
<td>0.000</td>
</tr>
</tbody>
</table>

## Sample 

<table>
<thead>
<tr>
<th>Intg. Area</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>340.6</td>
<td>0.251</td>
</tr>
<tr>
<td>283.8</td>
<td>0.025</td>
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<tr>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>3386</td>
<td>0.098</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.374

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** MARTY  
**Analyst Signature:**

**Avg. Tot. Stabilizers:** 0.37%

**Stable:** YES  
**Unstable:**

**Comments:**

**Lab. Supervisor Signature:**

**CATEGORY:** A

**Actions to be Taken:**

---

**Form #158**  
**Original Print Date:** 07/19/2010

**EXP_001672**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 Sep 2012

## Other Information

**Sample Data**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
<td>100 ml ACN</td>
<td></td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>578.6</td>
<td>1.186</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
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<td>0.000</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>23990</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNPA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
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<td>0.003</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>88.7</td>
<td>0.003</td>
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<tr>
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<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>812.6</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.249

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Mike Kile**  
**Avg. Tot. Stabilizers:** 1.25 %

## Analyst Signature

Stable **YES** Unstable

## Lab. Supervisor Signature

Comments  
**CATEGORY:** A

Actions to be Taken

---

Form #158  
Original Print Date: 07/19/2010  
EXP_001673
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND81L070072  D533 / M6 propellant

Date of analysis:  Date: 29 MAY 2012

Other Information
M6 Propellant

Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

Solvent:

<table>
<thead>
<tr>
<th>Standards (ERG-008)</th>
<th>Sample #</th>
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<tbody>
<tr>
<td>Stabilizer</td>
<td>Ret</td>
</tr>
<tr>
<td></td>
<td>ppm</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDF</td>
<td>50.0</td>
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<td>2,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.363

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson

Avg. Tot. Stabilizers: 0.36%

Analyst Signature

Stable: YES Unstable

Comments

CATEGORY: A

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81G070061  
**D533 / M6 propellant**

**Date of analysis:** Date: 12 JULY 2011

### Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Weight (g)</th>
<th>Volume (ml)</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50</td>
<td>100</td>
<td>ACN</td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'DNDPA</td>
<td>50.0</td>
<td>0.71</td>
<td>111</td>
<td>358.1</td>
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<td>2,4-DNDPA</td>
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<td>2,2'DNDPA</td>
<td>50.0</td>
<td>5.325</td>
<td>95</td>
<td>18335</td>
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<td>7.791</td>
<td>1051.3</td>
<td>83.2</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.345</td>
<td>1700.8</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.629</td>
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<td>DPA</td>
<td>200.0</td>
<td>12.152</td>
<td>5943.4</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.034</td>
<td>1443.1</td>
<td>111.8</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.421

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

**Analyst:** Mike Kile

**Avg. Tot. Stabilizers:** 0.42%

### Analyst Signature

**Stable:** YES  
**Unstable:**

### Comments

**CATEGORY:** A

### Lab. Supervisor Signature

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81F070024  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 9 DEC 2011

## Sample Data

| Sample Data #1 | 0.50 g | 100 ml | ACN |

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret Time ppm</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc.</th>
</tr>
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<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0 0.748 166.8</td>
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<td>892.3 0.535</td>
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<td>50.0 3.333 991.5</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0 5.039 624.7</td>
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<td>22530 0.000</td>
<td></td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0 7.221 1076.5</td>
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<td>50.0 8.681 1747.7</td>
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<td>200.0 11.276 5985.4</td>
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<td>604.1 0.040</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0 12.035 1482.1</td>
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<td>0 0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.582

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** TAKISHA DICKERSON  
**Avg. Tot. Stabilizers:** 0.58 %

**Analyst Signature:**  
**Stable:** YES  **Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**  
**Actions to be Taken:**
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>ppm</td>
<td>Time</td>
</tr>
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<td>4,4'-DNDCPA</td>
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<td>75.0</td>
<td>12.872</td>
<td>1320.7</td>
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Avg. % Stabilizer for Lot: 0.467

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Takisha Dickerson
Analyst Signature

Avg. Tot. Stabilizers: 0.47%

Stable: YES Unstable

Comments: CATEGORY: A

Actions to be Taken
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, shall be shipped under this contract meaning any person or corporation in possession of the property under this contract agrees to carry the usual place of delivery of said destination. It is his route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service shall be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth in Uniform Freight Classification in effect on the date hereof. It this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At
By

Freight Charges: Collect □ Prepaid □ Location No.

Shipment No. 2885
Shipping Date 4/11/15
Purchase Order No.

(Mail or Street Address of Consignee — For purposes of notification only).

Consigned to

Destination

State

Fed Lic. Exp. Date

State Lic. Exp. Date

County

Customer No.

Route

Charge Account of

Customer P.O. No.

Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EXEMPTION DOT-8</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Pkg</td>
<td>No. of UNITS</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>No. of Pkg</td>
<td>No. of UNITS</td>
<td>#112</td>
<td>EXPLOSIVES 1.3</td>
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<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

RECEIVED
MARCH 28, 2013

AUSTIN POWDER COMPANY
EAST CAMDEN PLANT

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT IN THE USA CALL 800-424-9350 IN CANADA (ERF #2-0040) 604-581-3636 ELSEWHERE CALL(703) 527-3887

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

Date

Q CONSIGNEE  Q CARRIER

By

Date

AUTHORIZED RECEIVER

020044

CONTAINS HAZARDOUS MATERIALS

EXP_001678
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-27-13

B/L# 2885 TRL 1810004

M-6

IND81L-070072  7 PTS
IND84G-070326  10 PTS
IND83F-070276  12 PTS
IND83F-070274  3 PTS
IND84K-070448  2 PTS
IND84C-070331  2 PTS
IND85F-070587  1 PT
IND82E-070115  4 PTS
IND83E-070273  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS  35,280 lbs

LIONEL KOONS

EXPLO SYSTEMS INC
SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted
Technical Information Phone No.: 318.382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL: 5 mg/m³</td>
<td>ACGIH TLV: 5 mg/m³</td>
<td>EPA RQ: 10 lbs</td>
<td>DOT RQ: 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL: 10 mg/m³</td>
<td>ACGIH TLV: 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
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<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL: none published</td>
<td>ACGIH TLV: none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>—</td>
<td>87.00</td>
<td>OSHA PEL: none published</td>
<td>ACGIH TLV: none published</td>
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<td>DOT RQ (none defined)</td>
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<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL: 10 mg/m³</td>
<td>ACGIH TLV: 10 mg/m³</td>
<td>EPA RQ: 10 lbs</td>
<td>DOT RQ: 10 lbs</td>
</tr>
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</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX
4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-extinguishing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (50°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: Negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.

Page 2 of 3
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES  
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:  
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER  
PRODUCT DESIGNATION/PART NUMBER
EX2010040603  
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned: 
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie  
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
EXPLOSIVE HIGHWAY ROUTE PLAN

DATE: 3/27/18

TRUCK #: 6136 TRAILER #: 1810064 WORK ORDER #: 215339 B/L #: 2885


HIGHWAY ROUTES

LA LOCAL I20, I-167

AR I-267 I-277 I-203

Super 70 changes

NOTE: The above information is to be completed before leaving the shipper. This form is to be retained with your Bill of Lading until delivery is made.

DRIVER SIGNATURE: 1. 

DRIVER SIGNATURE: 2. Hunter Barwick
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-27-13

B/L# 2885 TRL 1810004

M-6

IND81L-070072  7 PTS
IND84G-070326  10 PTS
IND83F-070276  12 PTS
IND83F-070274  3 PTS
IND84K-070448  2 PTS
IND84C-070331  2 PTS
IND85F-070587  1 PT
IND82E-070115  4 PTS
IND83E-070273  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
## MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

(Read instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

### SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER: **2885**

2. CARRIER/GOVERNMENT ORGANIZATION: **RRUI**

3. DATE/TIME OF INSPECTION: **3/27/13**

4. LOCATION OF INSPECTION: **ERAL SYSTMS**

5. OPERATOR(S) NAME(S): **MARK H. HENNES**

6. OPERATOR(S) LICENSE NUMBER(S): **R202343009_AW**

7. MEDICAL EXAMINER'S CERTIFICATE: **Y**

8. (X) If satisfactory at origin

a. MILITARY HAZMAT ENDORSEMENT
b. VALID LEASE

c. ROUTE PLAN
d. TRUCK/TRACTOR

e. COPY OF 49 CFR PART 397
f. TRAILER

### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE(S): **TRAILER/TRACTOR**

11. VEHICLE NUMBERS: **TBNL 42436 CV TRL 76 14001**

12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>Origin (1)</th>
<th>Destination (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT UNSAT</td>
<td>SAT UNSAT</td>
</tr>
<tr>
<td>SAT UNSAT</td>
<td>SAT UNSAT</td>
</tr>
</tbody>
</table>

a. SPARE ELECTRICAL FUSES
b. HOE OPERATIVE
c. STEERING SYSTEM
d. WINDSHIELD WIPERS
e. MIRRORS
f. WARNING EQUIPMENT
g. FIRE EXTINGUISHERS
h. ELECTRICAL WIRING
i. LIGHTS AND REFLECTORS
j. FUEL SYSTEM

13. INSPECTION RESULTS (X one) **REJECTED**

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: **(X one) ACCEPTED**

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEPARATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPAULIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 228 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070587  
**D533 / M6 propellant**

**Date of analysis:**

**Other Information:**

**Sample Data**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>#1</th>
<th>0.5000 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>2.177</td>
<td>146.5</td>
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<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
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<td></td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
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<td></td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.931</td>
<td>938.5</td>
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<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.19</td>
<td>4886.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Intg.**

| 1821.4 | 1.243 |
| 0 | 0.000 |
| 14427.7 | 0.000 |
| 0 | 0.000 |
| 0 | 0.000 |
| 225 | 0.018 |
| 0 | 0.000 |

**Avg. % Stabilizer for Lot**

- **1.262**

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**

- Kisha Dickerson

**Avg. Tot. Stabilizers**

- **1.26 %**

**Analyst Signature**

**Stable**

**YES**

**Unstable**

**Comments**

**CATEGORY:**

- A

**Lab. Supervisor Signature**

**Actions to be Taken**

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Form #158  
Original Print Date: 07/19/2010

EXP_001687
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84C070331  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 21 SEP 2010

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.5000 g</td>
</tr>
</tbody>
</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>2.168</td>
<td>128.5</td>
<td>113.7</td>
<td>0.088</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.033</td>
<td>432</td>
<td>217.6</td>
<td>0.050</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>7.206</td>
<td>1480.8</td>
<td>820.7</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>10.409</td>
<td>485.4</td>
<td>222.7</td>
<td>0.046</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.024</td>
<td>1113.3</td>
<td>522</td>
<td>0.047</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>13.489</td>
<td>784</td>
<td>398.3</td>
<td>0.051</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>14.97</td>
<td>2121.4</td>
<td>1130.5</td>
<td>0.213</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>16.167</td>
<td>463.9</td>
<td>299.3</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.495

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

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**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
0.50 %

**Analyst Signature**  
Stable YES Unstable

**Comments**  
CATEGORY: A

**Lab. Supervisor Signature**  
Actions to be Taken
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND84K070448  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 1 Mar 2012

**Other Information**  
**Sample Data**  
**Solvent**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Weight (g)</th>
<th>Volume (ml)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50</td>
<td>100</td>
<td>ACN</td>
</tr>
</tbody>
</table>

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.872</td>
<td>13.8</td>
<td>0.708</td>
<td></td>
</tr>
<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>3.42</td>
<td>982.9</td>
<td>0.000</td>
<td></td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.182</td>
<td>2038.4</td>
<td>0.000</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.485</td>
<td>1080.4</td>
<td>0.000</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.991</td>
<td>1708.9</td>
<td>0.000</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.17</td>
<td>3622.7</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.707</td>
<td>6061.6</td>
<td>0.054</td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.518</td>
<td>1481.9</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.768

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.77 %

**Signature**

**Stable**  
**Unstable**

**Comments**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 3 MAY 2012

**Other Information**  
**Sample Data**  
**Solvent**  
#1 0.50 g 100 ml ACN

---

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area</th>
<th>Conc. Ret</th>
<th>Intg. Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0 ppm</td>
<td>0.867</td>
<td>104.4</td>
<td>324.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0 ppm</td>
<td>3.335</td>
<td>1105.6</td>
<td>0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0 ppm</td>
<td>5.007</td>
<td>4986.7</td>
<td>23068</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0 ppm</td>
<td>7.137</td>
<td>1206.9</td>
<td>0</td>
</tr>
<tr>
<td>4NDA</td>
<td>50.0 ppm</td>
<td>8.593</td>
<td>1969.2</td>
<td>87.1</td>
</tr>
<tr>
<td>2NDA</td>
<td>50.0 ppm</td>
<td>9.688</td>
<td>3527.8</td>
<td>151.4</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 ppm</td>
<td>11.153</td>
<td>7041.6</td>
<td>785.8</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 ppm</td>
<td>11.897</td>
<td>1704.5</td>
<td>0.000</td>
</tr>
</tbody>
</table>

---

**Avg. % Stabilizer for Lot:** 0.364

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0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

---

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.36 %

**Analyst Signature**

**Stable** YES  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:** Date: 27 JULY 2011

**Sample Data**  
Solvent: #1 0.50 g 100 ml ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time (min)</th>
<th>Intg. Area 1 (%)</th>
<th>Intg. Area 2 (%)</th>
<th>Conc. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDDPA</td>
<td>50.0</td>
<td>0.694</td>
<td>112.8</td>
<td>622.1</td>
<td>0.552</td>
</tr>
<tr>
<td>2,4-DNDDPA</td>
<td>50.0</td>
<td>3.477</td>
<td>942.8</td>
<td>22209</td>
<td>0.000</td>
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<tr>
<td>2,2'-DNDDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
<td>48.5</td>
<td>0.003</td>
</tr>
<tr>
<td>2,4'-DNDDPA</td>
<td>50.0</td>
<td>7.842</td>
<td>1020.3</td>
<td>98.3</td>
<td>0.003</td>
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<tr>
<td>4DNDDPA</td>
<td>50.0</td>
<td>9.392</td>
<td>1634.2</td>
<td>451.4</td>
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<tr>
<td>2NDDPA</td>
<td>50.0</td>
<td>10.693</td>
<td>2956.2</td>
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<td>0.000</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>12.201</td>
<td>5630.5</td>
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<td>0.000</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1385.2</td>
<td></td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.59 %  
**Stable:** YES  
**Unstable:**

**Comments:**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 4 Sep 2012

**Other Information**  
**Sample Data**  
**Solvent**  
# 1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Area</td>
</tr>
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<td>4,4’ DNDPA</td>
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<td>0.889</td>
<td>48.8</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
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<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
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<td>2-’ DNDPA</td>
<td>50.0</td>
<td>7.622</td>
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<td>9.134</td>
<td>1586.8</td>
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</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td></td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
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</table>

## Sample #

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>578.6</td>
<td>1.186</td>
</tr>
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<td></td>
<td>23990</td>
<td>0.000</td>
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<tr>
<td></td>
<td>40.6</td>
<td>0.003</td>
</tr>
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<td></td>
<td>88.7</td>
<td>0.003</td>
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<tr>
<td></td>
<td>812.6</td>
<td>0.057</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.249

**0.30% or more is Stability Code A**  
**0.20% -0.29% is Stability Code C**  
**Less than 0.20% is Stability Code D**

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.25％

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**

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Form #158  
Original Print Date: 07/19/2010  
020058  
EXP_001692
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070115

**D533 / M6 propellant**

**Date of analysis:**

**Sample Data**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Date: 2 SEPTEMBER 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
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**M6 Propellant**

**Standards (ERG-006)**

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**Avg. % Stabilizer for Lot = 0.505**

0.30% or more is Stability Code A
0.20% -0.25% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**

**KISHA DICKERSON**

**Avg. Tot. Stabilizers = 0.50 %**

**Analyst Signature**

**Stable**

**Unstable**

**Comments**

**CATEGORY: A**

**Lab. Supervisor Signature**

**Actions to be Taken**
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070072  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 29 MAY 2012

**Other Information**  
Sample Data:  
Solvent:  
#1  
0.50 g  
100 ml  
ACN

#### Standards (ERG-006)  
Sample #

<table>
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<tr>
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#### Avg. % Stabilizer for Lot  
0.363

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.36 %

**Analyst Signature**  
**Stable** YES Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and delivered as indicated below, to the carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry a usual place of delivery of said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service lobe performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

Freight Charges: Collect
Prepaid
Location No.

Consigned to:
Fed Lic.
Exp. Date

Destination:
State:

County:

Route:

Charge Account of:

Customer P.O. No.
Rel. No.

PROPER SHIPPING NAME
AND HAZARD CLASS

UN0161, Powder, Smokeless, 1.3C, PG II

EMERGENCY RESPONSE
RISK GROUP

EXEMPTION
DOT-E
H
M

335

EXKLO1695

EXPLOSIVES 1.3

RECEIVED
MAR 28 2013

J. L. B. JUNIO POWDER COMPANY
EAST CAMDEN PLANT

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTRIC — DAY OR NIGHT
IN THE USA CALL 800-424-9300 IN CANADA (ERP #2-0040) 800-561-3638 ELSEWHERE CALL (703) 527-3887

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, Louisiana 71055

I have been offered placentas identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Per

Received By

Date

Q CONSIGNEE Q CARRIER

DATE

By

AUTHORIZED RECEIVER

CONTAINS HAZARDOUS MATERIALS

020061

EXP_001695
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-28-13

B/L# 2888 TRL 6810057

M-6

IND81L-070072 3 PTS
IND84G-070326 6 PTS
IND83F-070276 10 PTS
IND83F-070274 4 PTS
IND83E-070273 4 PT
IND81F-070024 3 PTS
IND81G-070061 1 PT
IND83F-070278 1 PT
IND82G-070164 3 PTS
IND87D-070450 5 PTS
IND86E-070616 2 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-28-13

B/L# 2888 TRL 6810057

M-6

IND81L-070072  3 PTS
IND84G-070326  6 PTS
IND83F-070276  10 PTS
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IND83E-070273  4 PT
IND81F-070024  3 PTS
IND81G-070061  1 PT
IND83F-070278  1 PT
IND82G-070164  3 PTS
IND870-070450  5 PTS
IND86E-070616  2 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)
(Read Instructions before completing this form.)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

2. CARRIER/GOVERNMENT ORGANIZATION

3. DATE/TIME OF INSPECTION

4. LOCATION OF INSPECTION

5. OPERATOR(S) NAME(S)

6. OPERATOR(S) LICENSE NUMBER(S)

7. MEDICAL EXAMINER'S CERTIFICATE* 

8. (X) if satisfactory at origin
   a. MILITARY HAZMAT ENDORSEMENT
   b. PREVIOUS CONDITION
   c. ROUTE PLAN
   d. ERG OR EQUIVALENT COMMERCIAL

9. CVSA DECAL DISPLAYED ON COMMERCIAL EQUIPMENT*

SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE(S)
     TRACTOR TRAILER/ DRUM
     VEHICLE NUMBER(S) TRAC TRAIL DRUM

12. PART INSPECTED
     (X as applicable)

13. INSPECTION RESULTS
     (X one)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one)

15. REMARKS

16. INSPECTOR SIGNATURE (Origin)

17. INSPECTOR SIGNATURE (Destination)

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SEALED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPAULIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 626 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted
Technical Information Phone No.: 318-382-8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
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<th>Ingredient</th>
<th>CAS No.</th>
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<td>ACGIH TLV</td>
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<tr>
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<td></td>
<td>EPA RQ (if defined)</td>
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<td></td>
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<td>ACGIH TLV 5 mg/m³</td>
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<td></td>
<td></td>
<td>EPA RQ 10 lbs</td>
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<td>DOT RQ 10 lbs</td>
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<td>DOT RQ 10 lbs</td>
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MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

Hazardous Materials Identification System

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<td>3 = SERIOUS HAZARD</td>
<td>B</td>
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<td>2 = MODERATE HAZARD</td>
<td>C</td>
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<td>1 = SLIGHT HAZARD</td>
<td>D</td>
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<tr>
<td>0 = MINIMAL HAZARD</td>
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PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight. Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explo systems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Redeemed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging – UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

## Other Information

**M6 Propellant**

<table>
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<tbody>
<tr>
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## Standards (ERG-006)

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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Concentration %</th>
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<td>2NDPA</td>
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<tr>
<td>DPA</td>
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<td>46.7</td>
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<td>N-NitrosoDPA</td>
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**Avg. % Stabilizer for Lot:** 0.651

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Analyst Signature:**

**Avg. Tot. Stabilizers:** 0.65%

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**

**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:** Date: 19 NOV 2010

**Other Information**

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**M6 Propellant**

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
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</thead>
<tbody>
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<td>75.0</td>
<td>18.033</td>
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**Avg. % Stabilizer for Lot:** 0.504

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.50 %

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326  
**D533 / M6 propellant**

**Date of analysis:** 3 MAY 2012

**Solvent**

| Sample Data | #1 | 0.50 g | 100 ml | ACN |

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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**Avg. % Stabilizer for Lot: 0.364**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.36 %

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**D533 / M6 propellant**  
**Date of analysis:**  
**Date:** 11 JULY 2012

## Other Information
- **Sample Data:**  
  - Sample #1: 0.50 g, 100 ml, ACN

## Standards (ERG-006)

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<th></th>
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<td>Time</td>
<td></td>
<td></td>
<td></td>
<td>Area</td>
<td>%</td>
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<td>0.803</td>
<td>32.3</td>
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</tr>
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<td>3.397</td>
<td>945.1</td>
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<td>5.155</td>
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<td>12.806</td>
<td>1672.4</td>
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**Avg. % Stabilizer for Lot:** 0.843

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

## Analyst
- **Takisha Dickerson**

## Analyst Signature
- **Stable:** YES

## Comments
- **CATEGORY:** A

## Lab. Supervisor Signature

## Actions to be Taken

---

**Form #158**  
**Original Print Date:** 07/19/2010

**EXP_001707**
## HPLC PROPELLANT STABILITY REPORT

Lot Number: IND83F070274  
D533 / M6 propellant

Date of analysis:  
Date: 27 JULY 2011

Other Information  
M6 Propellant

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<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
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<tr>
<td>#1</td>
<td>0.50 g</td>
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</tbody>
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### Standards (ERG-006)

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<th>Concentration ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Sample # Intg. Area %</th>
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<tbody>
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<td>4,4' DNDPA</td>
<td>50.0</td>
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<td>50.0</td>
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<td>7.842</td>
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<td>75.0</td>
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Avg. % Stabilizer for Lot: 0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
Takisha Dickerson

### Average Total Stabilizers
0.59%

### Analyst Signature
Stable YES Unstable

### Comments
CATEGORY: A

### Lab. Supervisor Signature

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

Lot Number: IND83F070276

DS33 / M6 propellant

Date of analysis: Date: 4 Sep 2012

Other Information

M6 Propellant

Sample Data

| Solvent | #1 | 0.50 g  | 100 ml  | ACN |

Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
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<td>5.22</td>
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<td>2,4' DNDPA</td>
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Avg. % Stabilizer for Lot: 1.249

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Analyst: Mike Kile

Avg. Tot. Stabilizers: 1.25%

Analyst Signature

Stable: YES
Unstable: No

Comments:
CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken

Form #158

Original Print Date: 07/19/2010

EXP_001709
# HPLC Propellant Stability Report

**Lot Number:** IND82G070164  
**Date of Analysis:** 22 Dec 2010  
**Analyte:** D533 / M6 propellant

<table>
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<tr>
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<td>2,4-DNDPA</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
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<tr>
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<td>50.0</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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**Avg. % Stabilizer for Lot:** 2.771

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.77%  
**Comments:** CATEGORY: A  
**Actions to be Taken:**

**Stable:** YES  
**Unstable:**

**Analyst Signature**

**Lab. Supervisor Signature**
# HPLC Propellant Stability Report

**Lot Number:** IND81G070061  
**D533 / M6 Propellant**

**Date of analysis:** 12 July 2011

**Other Information**

- Sample Data: 
  - Sample #1: 0.50 g, 100 ml, ACN

**Standards (ERG-006)**

<table>
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<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Sample #</th>
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<tr>
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<td>5.325</td>
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**Avg. % Stabilizer for Lot:** 0.421

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 0.42

**Stable**  
**Unstable**

**Comments**

| CATEGORY: A |

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81F070024  
**D533 / M6 propellant**

**Date of analysis:** 
**Date:** 9 DEC 2011

## Other Information
- **Sample Data**
- **Solvent**
  - Sample: #1  
  - Weight: 0.50 g  
  - Volume: 100 ml  
  - Solvent: ACN

## Standards (ERG-006)

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<th>Stabilizer</th>
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<th>Intg.</th>
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<th>Intg.</th>
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<th>Area %</th>
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**Avg. % Stabilizer for Lot:** 0.582

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst
- **TAKISHA DICKERSON**

## Analyst Signature
- **Stable**: YES  
  - **Unstable**: 

## Comments
- **CATEGORY:** A

## Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070072  
**D533 / M6 propellant**  
**Date of analysis:** Date: 29 MAY 2012

## Other Information
- **Solvent**
  - Sample Data: #1  
  - 0.50 g  
  - 100 ml  
  - ACN

## Standards (ERG-006)

<table>
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<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
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**Avg. % Stabilizer for Lot:** 0.363

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst
- **Takisha Dickerson**  
  - **Avg. Tot. Stabilizers:** 0.36%

## Analyst Signature  
**Stable:** YES | **Unstable:**

## Comments
- **CATEGORY:** A

## Actions to be Taken
## STRAIGHT BILL OF LADING

**RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.**

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, is subject to this straight bill of lading. The said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract), agrees to carry the said property over all or any portion of the said route to destination, and to each party at any time interested in all or any of said property, that every service perfoemed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, and (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assignees.

### Shipper's Information
- **Shipper:** Expo Systems, Inc.
  - **Address:** 1600 Java Road, Minden, LA 71055
- **Freight Charges:** Collect
- **Prepaid:** Yes
- **Location No.:** 29213

### Consigned to
- **Fed Lic.:**
- **State Lic.:**
- **Exp. Date:**
- **State:**
- **County:**
- **Route:**
- **Charge Account of:**
- **Customer P.O. No.:**
- **Rel. No.:**

### Goods Description

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EXEMPTION DOT &amp; H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Pkg</td>
<td>No. of Units</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>No. of Pkg</td>
<td>No. of Units</td>
<td>#112</td>
<td>EXPLOSIVES 1.3</td>
</tr>
</tbody>
</table>

**RECEIVED**

**MAR 28, 2013**

**AUSTIN POWDER COMPANY**
EAST CAMDEN PLANT

**SIGNED**

### Certification

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Signature**

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-8000 IN CANADA (ERF #2-0040) 800-661-2636 ELSEWHERE CALL (702) 527-3887

I have been offered placards identifying the shipment as Specific in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

**Received By**
- **Date:**
- **Q CONSIGNEE**
- **Q CARRIER**

**By**
- **AUTHORIZED RECEIVER**
- **Date:**

**Per**
- **DOT Hazardous Material Handling Number**
- **Local Federal Explosives License No. 5-LA-119-20-1A-00057**

**Shipper:**
- **Address:**
- **Telephone:**

**Permanency Address of Shipper:**
- **Explo Systems, Inc.**
  - **Address:** 1600 Java Road, Minden, LA 71055
  - **Telephone:** 382-8700

**Per:**
- **Date:**

**Invoice No.:**

**EXP_001714**
# Austin Powder Packing List

**Shipment Date**: 3-28-13  
**B/L**: 2889 TRL 7810099  
**M-6**  

<table>
<thead>
<tr>
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<th>Quantity</th>
<th>Description</th>
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<tr>
<td>IND84G-070326</td>
<td>3</td>
<td>PTS</td>
</tr>
<tr>
<td>IND88E-0709273</td>
<td>2</td>
<td>PTS</td>
</tr>
<tr>
<td>IND88F-070276</td>
<td>9</td>
<td>PTS</td>
</tr>
<tr>
<td>IND81L-070072</td>
<td>5</td>
<td>PTS</td>
</tr>
<tr>
<td>IND88F-070274</td>
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<td>PT</td>
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<td>IND830-070139</td>
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<td>PTS</td>
</tr>
<tr>
<td>IND81D-070015</td>
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<td>PTS</td>
</tr>
<tr>
<td>IND81H-070063</td>
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<td>PTS</td>
</tr>
<tr>
<td>IND86E-070616</td>
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<td>PT</td>
</tr>
<tr>
<td>IND83M-070322</td>
<td>4</td>
<td>PTS</td>
</tr>
</tbody>
</table>

42 PTS WITH 6 FB @140 LBS PER DRUM

**Total**: 35,280 LBS

*Signature*

LIONEL KOONS  
EXPLO SYSTEMS INC
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-28-13

B/L# 2889 TRL 7810099

M-6

IND84G-070326   3 PTS
IND83E-0709273  2 PTS
IND83F-070276   9 PTS
IND81L-070072   5 PTS
IND83F-070274   1 PT
IND83D-070139   12 PTS
IND81D-070015   3 PTS
IND81H-070063   2 PTS
IND86E-070616   1 PT
IND83M-070322   4 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35280 LBS

[Signature]

LIONEL KOONS

EXPLOR SYSTEMS INC
CSA Cargo-Related / HazMat BASIC Checklist

Truck #: __________ Trip #: __________ Date: __________

Initial Your Verifications

Loading Checks

- Verified load count, package condition & securement - cargo immobilized from shifting, falling, or spilling. 171.2; 392.9; 393.100; or,
- When applicable, paperwork marked by driver, "Shipment Pre-Loaded, Counted & Sealed by Shipper", add your name & date; or
- When applicable, paperwork marked by driver, "SLC - Shipper Load and Count". You must still secure or verify securement.
- Tie-downs are sufficient and are not damaged; all packages are secure in or on the trailer. 177.834; 173.24; 393.104; 393.100
- Placards applied as required and are securely affixed; placards are not damaged, deteriorated, or obscured. 172.504; 172516; 177.823

Shipping Papers (SP), Emergency Response Guidebook and other Required Documents Entries for Dispatch

- The 3 parts of HazMat paperwork to have ready at roadside: SP, Emergency Response Guidebook (ERG) & our Contingency Plan.
- Verified Proper Shipping Name & Basic Description with the table in 172.101
- Verified HazMat entries on SP: a. PSN, HC, ID#, PG - good until 12/31/12; b. ID#, PSN, HC, PG mandatory compliance 1/1/13. 172.202
- Verified HazMat entries are listed first, or highlighted, or tabbed, "X" in the HazMat column - HazMat entries must be first. 172.202
- Net Explosive Weight (NEW) must be shown (this can be estimated by shipper or you) along with gross weight on the SP. 172.202
- Emergency Response Guidebook (ERG) tabbed or turned to the correct E R Guide; also, noted on the SP near the PSN. 172.602
- Emergency Response information on SP - a. ER provider name & phone + contract # or name; or, b. shipper name & phone; 172.600
- SP Accessibility: in driver's door pouch - preferred; in driver's unoccupied seat; on dash within driver's reach when belted. 177.817
- When applicable, Written Explosive Route Plan - completed. 397.67(d)
- When applicable, Written Radioactive Route Plan - completed. 397.101
- Communications Plan for all placarded shipments: send Macros when departing, delivering, & change of duty status. 385.415
- Verified tractor and trailer annual inspections are current. 396.17
- A company padlock is required when loaded or empty; you may not be able to apply a company lock on some government loads.

Hazardous Waste Manifests

- Verified shipper (generator) is using correct manifest form: EPA Form 8700-22 (Rev. 3-05) and Continuation Sheet 22A, if required.
- Verified load count, package condition & securement - cargo immobilized from shifting, falling, or spilling. 171.2; 392.9; 393.100; or,
- Verified HazMat entries on manifest. 172.202
- Emergency Response Guidebook (ERG) tabbed or turned to the correct E R Guide; also, noted on manifest near the PSN. 172.602
- Emergency Response info on manifest - a. ER provider name & phone + contract # or name; or, b. shipper name & phone; 172.600
- Verified Transporter EPA ID number on manifest: R & R - MOR000501973; AATCO - MOR000501981; NEI - MOR000508838.
- Verified with the shipper / generator they are using the correct EPA ID number (not ours).
- Net Explosive Weight (NEW) must be shown (this can be estimated by shipper or you) along with gross weight on manifest. 172.202
- Only 1 driver signs the manifest, the co-driver does NOT sign as Transporter 2 - unlike a 1907 where both drivers sign.
- Verified the entry of the total number of manifest pages - ex: Page 1 of 1; or, Page 2 of 2, etc.

Your non-compliance at roadside directly impacts both Safety Measurement System scores (Driver and Carrier) in CSA. Non-compliance will have a greater impact on your quarterly safety incentive.

Include this completed form with your paperwork in your next TripPak EXPRESS envelope for each shipment.

Original 9/23/11
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARDS 4

PERSONAL PROTECTION [B]

Hazardous Materials Identification System

Hazard Index
4 = SEVERE HAZARD
2 = SERIOUS HAZARD
1 = MODERATE HAZARD
0 = MINIMAL HAZARD

Personal Protection System

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None

First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.

Inhalation - Remove to fresh air. Treat irritation symptomatically; call physician.

Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.

Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.

Autoignition: 383°F (195°C)

Hazardous Combustion Products: Oxides of Carbon

Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.

Other Special Precautions: Flammable Solid…Keep away from heat, sparks, open flame…Keep containers closed…use with adequate ventilation.

Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.

Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496

Evaporation Rate: <1 (Butylacetate = 1)

Solubility in Water: negligible


Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER      PRODUCT DESIGNATION/PART NUMBER
EX2010040603            Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging – UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety
For Information on "Compatibility Group" Letters,

PROCEDURES TO PROTECT HAZARDOUS.

- Ensure that medical assistance is available before starting.
- In case of contact with eyes, immediately flush eyes with running water for
- Remove and replace contaminated clothing and shoes.
- Dispense dry absorbent materials, such as paper towels or clothing, to absorb
- Give artificial respiration if breathing is not occurring.
- Move victim to reach air. Call for emergency medical service.

FIRST AID

EVALUATION

- Consider initial evacuation for 500 meters (1/2 mile) in all directions.
- Consider initial evacuation for 1000 meters (1 mile) in all directions.
- May be a fire in the area. Consult local emergency responders and follow their direction.

PROTECTIVE CLOTHING

- Wear protective clothing when making evacuation.
- May be needed to protect from gas exposure.

PUBLIC SAFETY

- Before entering the area, proceed immediately to wiring.
- Inside each shelter, contact local emergency responders and follow their directions.
- If explosion, fire, or explosion, report to nearest emergency responder.

HEALTH

- May cause respiratory problems. Call your physician immediately for medical advice.

WASTE

- For Information on "Compatibility Group" Letters, refer to Glossary section.

EXPLOSIONS, DIVISION 1.1, 1.2, 1.3, 1.5:

- Do not mix explosives with other materials.
- Do not store explosives with other materials.
- Do not expose explosives to water, extremes of temperature, or fire.

EMERGENCY RESPONSE

- Call emergency responders. Report number of shipping paper and first-aid

GUIDE

1.2 CLASS 1.3, 1.5:

- Do not mix explosives with other materials.
- Do not store explosives with other materials.
- Do not expose explosives to water, extremes of temperature, or fire.

- Do not mix explosives with other materials.
- Do not store explosives with other materials.
- Do not expose explosives to water, extremes of temperature, or fire.
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**D533 / M6 propellant**

**Date of analysis:** Date: 19 NOV 2010

**Other Information**  
Sample Data  
**Solvent**  
#1 0.5000 g 100 ml ACN

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
<th>Conc.</th>
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<td>4,4' DNDPA</td>
<td>50.0</td>
<td>2.068</td>
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<td>18.033</td>
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<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot**

0.504

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Kisha Dickerson  
**Avg. Tot. Stabilizers** 0.50 %

**Analyst Signature**

**Stable** YES **Unstable**

**Comments** CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPPELLANT STABILITY REPORT

<table>
<thead>
<tr>
<th>Lot Number: IND84G070326</th>
<th>D533 / M6 propellant</th>
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<tbody>
<tr>
<td>Date of analysis:</td>
<td>Date: 3 MAY 2012</td>
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<tr>
<td>Other Information</td>
<td></td>
</tr>
<tr>
<td>M6 Propellant</td>
<td></td>
</tr>
<tr>
<td>Sample Data</td>
<td></td>
</tr>
<tr>
<td>#1</td>
<td></td>
</tr>
<tr>
<td>Solvent</td>
<td></td>
</tr>
<tr>
<td>ACN</td>
<td></td>
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</table>

### Standards (ERG-006)

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<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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</table>

### Analyst

- Analyst: Takisha Dickerson
- Analyst Signature: [Signature]
- Avg. Tot. Stabilizers: 0.36%
- Stable: YES
- Unstable: NO
- Comments: CATEGORY: A

### Actions to be Taken

- [Activities to be taken]
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 JULY 2010

### Other Information

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<th>Solvent</th>
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<tbody>
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<td>ACN</td>
</tr>
<tr>
<td>0.5000 g</td>
<td>100 ml</td>
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### M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-005)</th>
<th>Sample #</th>
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<td>Intg.</td>
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<tr>
<td>ppm</td>
<td>Time</td>
</tr>
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<td></td>
<td>%</td>
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<td>50.0</td>
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<td>DPA</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
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### Avg. % Stabilizer for Lot

0.374

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

**MARTY**

### Average Total Stabilizers

0.37%

### Analyst Signature

Stable: YES  Unstable: 

### Comments

**CATEGORY:** A

### Lab. Supervisor Signature

### Actions to be Taken

---

**Form #158**  
**Original Print Date: 07/19/2010**  
**EXP_001724**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**Date of analysis:** Date: 27 JULY 2011

### M6 Propellant

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<td>ACN</td>
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<tr>
<td>0.50 g</td>
<td>100 ml</td>
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### Standards (ERG-006)

<table>
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</thead>
<tbody>
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<td>4,4'-DNDPA</td>
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<td>942.8</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
<td>22209</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>7.842</td>
<td>1020.3</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.392</td>
<td>1634.2</td>
<td>48.5</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.693</td>
<td>2956.2</td>
<td>98.3</td>
<td>0.003</td>
</tr>
<tr>
<td>DPA</td>
<td>100.0</td>
<td>12.201</td>
<td>5630.5</td>
<td>451.4</td>
<td>0.032</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
<td>1395.2</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.590

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

<table>
<thead>
<tr>
<th>Analyst</th>
<th>Takisha Dickerson</th>
<th>Avg. Tot. Stabilizers</th>
<th>0.59 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Signature</td>
<td>Stable</td>
<td>YES</td>
<td>Unstable</td>
</tr>
<tr>
<td>Comments</td>
<td>CATEGORY:</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Lab. Supervisor Signature</td>
<td>Actions to be Taken</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 4 Sep 2012

**Other Information**  
**M6 Propellant**

**Sample Data**  
**Solvent:**  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.889</td>
<td>48.8</td>
<td>578.6</td>
<td>1.186</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.418</td>
<td>914.3</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.22</td>
<td>777.3</td>
<td>23990</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4' DNDA</td>
<td>50.0</td>
<td>7.622</td>
<td>980.5</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>40.6</td>
<td>0.003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>88.7</td>
<td>0.003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>812.6</td>
<td>0.057</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.249

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 1.25 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**

**Lab. Supervisor Signature**  
**Comments**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  |  **D533 / M6 propellant**  
**Date of analysis:**  |  **Date:** 20 OCT 2010  
**Other Information**  |  **Sample Data**  
**M6 Propellant**  |  **Solvent**  
#1  |  0.5000 g  |  100 ml  |  ACN  

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stabilizer</strong></td>
<td><strong>Conc.</strong></td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4'-DNP</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
<tr>
<td><strong>Avg. % Stabilizer for Lot</strong></td>
<td>0.854</td>
</tr>
</tbody>
</table>

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers**  
0.85 %

**Analyst Signature**

**Stable**  
YES  
Unstable

**Comments**

**CATEGORY:**  
A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070072  
**D533 / M6 propellant**

**Date of analysis:** Date: 29 MAY 2012

**Other Information**  
Sample Data:  
#1  
0.50 g  
100 ml  
ACN

**Solvent**

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Intg. Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.363

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.36 %

**Analyst Signature**

**Stable**  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, is subject to the provisions of this contract, and the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, is subject to the provisions of this contract.

Shipped by: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect Prepaid

Shipper's No.: 2893
Shipping Date: 5/13/15

Consignment to:

(Mail or Street Address of Consignee — For purposes of notification only)

Destination:

State:
Fed Lic.:
Exp. Date:

County:
State Lic.:
Exp. Date:

Order No.:

Customer No.:

Charge Account of:

Customer P.O. No.:
Rel. No.:

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>EMERGENCY RESPONSE GROUP NO.</th>
<th>EXEMPTION DOT*-E</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
<td></td>
<td>EXPLOSIVES 1.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature: 

Invoice No.: 

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTEC — DAY OR NIGHT
IN THE USA CALL 800-424-3500
IN CANADA (ERP # 0040) 800-561-3636
ELSEWHERE CALL (703) 527-3887

Permanent Address of Shipper:
Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

DOT Hazardous Material Handling Number:

Local Federal Explosives License No. 5-LA-119-20-1A-00057 (Shipper)

Received By:  

Consignee:  

Carrier:  

Authorized Receiver:  

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.
**Motor Vehicle Inspection (Transporting Hazardous Materials)**

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

### Section I - Documentation

<table>
<thead>
<tr>
<th>Operation</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Carrier/Government Organization</td>
<td>Rock</td>
<td></td>
</tr>
<tr>
<td>3. Date/Time of Inspection</td>
<td>3/11/13</td>
<td></td>
</tr>
<tr>
<td>4. Location of Inspection</td>
<td>Enola Systems Inc.</td>
<td></td>
</tr>
<tr>
<td>5. Operator(s) Name(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Operator(s) License Number(s)</td>
<td>3208285-90060</td>
<td></td>
</tr>
<tr>
<td>7. Medical Examiner's Certificate</td>
<td>72516</td>
<td></td>
</tr>
</tbody>
</table>

### Section II - Mechanical Inspection

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Inspection Item</th>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Type of Vehicle(s)</td>
<td>Drom</td>
<td></td>
</tr>
<tr>
<td>11. Vehicle Number(s)</td>
<td>TRAC</td>
<td></td>
</tr>
<tr>
<td>12. Part inspected (X as applicable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Spare Electrical Fuses</td>
<td></td>
<td>Exhaust System</td>
</tr>
<tr>
<td>b. Horn Operative</td>
<td></td>
<td>Brake System*</td>
</tr>
<tr>
<td>c. Steering System</td>
<td></td>
<td>Suspension</td>
</tr>
<tr>
<td>d. Windshield/Wipers</td>
<td></td>
<td>Coupling Devices</td>
</tr>
<tr>
<td>e. Mirrors</td>
<td></td>
<td>Cargo Space</td>
</tr>
<tr>
<td>f. Warning Equipment</td>
<td></td>
<td>Landing Gear*</td>
</tr>
<tr>
<td>g. Fire Extinguisher*</td>
<td></td>
<td>Tires, Wheels, Rims</td>
</tr>
<tr>
<td>h. Electrical Wiring</td>
<td></td>
<td>Tailgated Doors*</td>
</tr>
<tr>
<td>i. Lights and Reflectors</td>
<td></td>
<td>Tarpaulin*</td>
</tr>
<tr>
<td>j. Fuel System*</td>
<td></td>
<td>Other (Specify)</td>
</tr>
</tbody>
</table>

### Section III - Post Loading Inspection

This section applies to commercial and government/military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Inspection Item</th>
<th>Origin</th>
<th>Destination</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Loaded IAW Applicable Segregation/Compatibility Table of 49 CFR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Load Properly Secured to Prevent Movement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Seals Applied to Closed Vehicle; Tarpaulin Applied on Open Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Proper Placards Applied</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Shipping Papers/DD Form 836 for Government Vehicle Shipments</td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>23. Copy of DD Form 625 for Driver</td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>24. Shipped Under DOT Special Permit 868</td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>25. Inspector Signature (Origin)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Driver(s) Signature (Origin)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Inspector Signature (Destination)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Driver(s) Signature (Destination)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# MATERIAL SAFETY DATA SHEET

## PROPELLANT (Wetted)

### SECTION 1 - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
**Technical Information Phone No.:** 318 382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flamable solid)</td>
<td>-</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [ ]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD INDEX

4 = SEVERE HAZARD
3 = SERIOUS HAZARD
2 = MODERATE HAZARD
1 = SLIGHT HAZARD
0 = MINIMAL HAZARD

PERSONAL PROTECTION INDEX

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately. INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (24°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BAFTE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
CLASSIFICATION OF EXPLOSIVES.
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER                   PRODUCT DESIGNATION/PART NUMBER
EX2010040603                         Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging – UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibai
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, is to be delivered to the named consignee or to the address indicated below. The shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, and that the said terms and conditions are hereby agreed to by the shipper and carrier for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect Prepaid

Shipper's No.: 2891
Shipping Date: 3/11/13
Purchase Order No.

Consigned to

(Mail or Street Address of Consignee — For purposes of notification only)

Consignee: Austin Powder Company, Camden Plant
2195 Bourgeois

Fed Lic. Exp. Date

State Lic. Exp. Date

County

Customer No.

Route

Charge Account of

Customer P.O. No.

Rel. No.

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED</th>
<th>RETURNED</th>
<th>EXEMPTION DOT-E</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Pkgs</td>
<td>No. of Units</td>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>No. of Pkgs</td>
<td>No. of Units</td>
<td>#112</td>
<td>EXPLOSIVES 1.3</td>
<td></td>
</tr>
</tbody>
</table>

Total Packages

Gross Weight

Net Explosive Weight

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT
IN THE USA CALL 800-424-9300 IN CANADA (ERF #2-0040) 800-581-9638 ELSEWHERE CALL (703) 527-3917

I have been offered placards identifying the shipment as specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

Date 4/1/13

Q CONSIGNEE Q CARRIER

By

AUTHORIZED RECEIVER

Per

DOT Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057 (Shipper)

020102

CONTAINS HAZARDOUS MATERIALS
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-31-13

B/L# 2891 TRL 181004

M-6

IND89D-071039  14 PTS
IND85C-070512  3 PTS
IND82E-070115  6 PTS
IND82H-070167  1 PT
IND87B-070678  1 PT
IND83E-070273  6 PTS
IND81H-070063  9 PTS
IND83K-070319  1 PT
IND81L-070072  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

[Signature]

LIONEL KOOKS

EXPLO SYSTEMS INC

Load 34
6LC14
### MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

**1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER**

**SECTION I - DOCUMENTATION**

- **2. CARRIER/GOVERNMENT ORGANIZATION**
  - ORIGIN: [ ]
  - DESTINATION: [ ]

- **3. DATE/TIME OF INSPECTION**
  - [ ]

- **4. LOCATION OF INSPECTION**
  - [ ]

- **5. OPERATOR(S) NAME(S)**
  - [ ]

- **6. OPERATOR(S) LICENSE NUMBER(S)**
  - [ ]

- **7. MEDICAL EXAMINER'S CERTIFICATE**
  - [ ]

- **8. (X if satisfactory at origin)**
  - [ ]

- **a. MILITARY HAZMAT ENDORSEMENT**
  - [ ]
  - [ ]

- **b. VACUUM LEASE**
  - [ ]
  - [ ]
  - [ ]

- **c. ROUTE PLAN**
  - [ ]
  - [ ]

**SECTION II - MECHANICAL INSPECTION**

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

**10. TYPE OF VEHICLE(S)**

<table>
<thead>
<tr>
<th>TRACTOR/TRACTOR TRAILER DRUM</th>
<th>TRAC **</th>
<th>TRAC **</th>
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<tbody>
<tr>
<td>PART INSPECTED</td>
<td>ORIGIN (1)</td>
<td>DESTINATION (2)</td>
</tr>
<tr>
<td>SAT UNSAT SAT SAT UNSAT SAT SAT</td>
<td>SAT UNSAT SAT</td>
<td>SAT UNSAT SAT</td>
</tr>
<tr>
<td>a. SPARE ELECTRICAL FUSES</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>b. HORN OPERATIVE</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>c. STEERING SYSTEM</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>d. WINDSHIELD WIPERS</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>e. MIRRORS</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>f. WARNING EQUIPMENT</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>g. FIRE EXTINGUISHER*</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>h. ELECTRICAL WIRING</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>i. LIGHTS AND REFLECTORS</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>j. FUEL SYSTEM*</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**13. INSPECTION RESULTS (X one)**

- ACCEPTED [ ]
- REJECTED [ ]

*(If rejected give reason under "Remarks": Equipment will be approved if deficiencies are corrected prior to loading.)*

**14. SATELLITE MOTOR SURVEILLANCE SYSTEM (X one)**

- ACCEPTED [ ]
- REJECTED [ ]

**15. REMARKS**

---

**SECTION III - POST LOADING INSPECTION**

This section applies to Commercial and Government/Military vehicles. All items shall be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

| LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR |
|------------------------|------------------------|------------------------|
| SAT UNSAT SAT SAT UNSAT SAT SAT | SAT UNSAT SAT | SAT UNSAT SAT |
| 19. LODGE PROPERLY SECURED TO PREVENT MOVEMENT |
| 20. SEALS APPLIED TO CLOSED VEHICLE; TARPALIN APPLIED ON OPEN EQUIPMENT |
| 21. PROPER PLACARDS APPLIED |
| 22. SHIP WIPERS/ODD FORM 866 FOR GOVERNMENT VEHICLE SHIPMENTS |
| 23. COPY OF DD FORM 626 FOR DRIVER |
| 24. SHIPPED UNDER DOT SPECIAL PERMIT 866 |

**16. INSPECTOR SIGNATURE (Origin)**

---

**17. INSPECTOR SIGNATURE (Destination)**

---

**25. INSPECTOR SIGNATURE (Origin)**

---

**28. DRIVER(S) SIGNATURE (Origin)**

---

**27. INSPECTOR SIGNATURE (Destination)**

---

**28. DRIVER(S) SIGNATURE (Destination)**

---
EXPLO SYSTEMS, INC.

Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

MATERIAL SAFETY DATA SHEET

PROPELLANT (Wetted)

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Propellant, Explosive, Solid, Wetted
Technical Information Phone No.: 318 382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
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</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<td>Nitrocellulose (flammable solid)</td>
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<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

**PROPELLANT**

**HEALTH**

2

**FLAMMABILITY**

4

**PHYSICAL HAZARD**

4

**PERSONAL PROTECTION**

[B]

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM**

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
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<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>A</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td>B</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>C</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td>D</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
<td>E</td>
</tr>
</tbody>
</table>

**PERSONAL PROTECTION EQUIPMENT:**

- A: Goggles
- B: Gloves
- C: Jacket
- D: Boots
- E: Respirator

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately. INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLVs.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 - July 13, 2012
Explo Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@explosystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER        PRODUCT DESIGNATION/PART NUMBER
EX2010040603              Redaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Tracking No: 2011040848
GUIDE EXPLOSIVES* - DIVISION 1.1, 1.2, 1.3, 1.5 OR 1.6; CLASS A OR B

**POSSIBLE HAZARDS**

**FIRE OR EXPLOSION**
- MAY EXPLODE AND THROW FRAGMENTS 1600 meters (1 MILE) OR MORE IF FIRE REACHES CARGO.
- For information on "Compatibility Group" letters, refer to Glossary section.

**HEALTH**
- Fire may produce irritating, corrosive and/or toxic gases.

**PUBLIC SAFETY**
- CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Isolate spill or leak area immediately for at least 500 meters (1/3 mile) in all directions.
- Move people out of line of sight of the scene and away from windows.
- Keep unauthorized personnel away.
- Stay upwind.
- Ventilate closed spaces before entering.

**PROTECTIVE CLOTHING**
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

**EVACUATION**

**Large Spill**
- Consider initial evacuation for 800 meters (1/2 mile) in all directions.

**Fire**
- If rail car or trailer is involved in a fire and heavily encased explosives such as bombs or artillery projectiles are suspected, ISOLATE for 1600 meters (1 mile) in all directions; also, initiate evacuation including emergency responders for 1600 meters (1 mile) in all directions.
- When heavily encased explosives are not involved, evacuate the area for 800 meters (1/2 mile) in all directions.

* For information on "Compatibility Group" letters, refer to the Glossary section.

---

GUIDE EXPLOSIVES* - DIVISION 1.1, 1.2, 1.3, 1.5 OR 1.6; CLASS A OR B

**EMERGENCY RESPONSE**

**FIRE**
- CARGO Fire
  - DO NOT fight fire when fire reaches cargo! Cargo may EXPLODE!
  - Stop all traffic and clear the area for at least 1600 meters (1 mile) in all directions and let burn.
  - Do not move cargo or vehicle if cargo has been exposed to heat.

**TIRES OR VEHICLE FIRE**
- Use plenty of water - FLOOD IT! If water is not available, use CO₂, dry chemical or dirt.
- If possible, and WITHOUT RISK, use unmanned hose holders or monitor nozzles from maximum distance to prevent fire from spreading to cargo area.
- Pay special attention to tire fires as re-ignition may occur. Stand by with extinguisher ready.

**SPILL OR LEAK**
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- DO NOT OPERATE RADIO TRANSMITTERS WITHIN 100 meters (330 feet) OF ELECTRIC DETONATORS.
- DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

**FIRST AID**
- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

* For information on "Compatibility Group" letters, refer to the Glossary section.
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-31-13

B/L# 2891 TRL 181004

M-6

IND89D-071039  14 PTS
IND85C-070512  3 PTS
IND82E-070115  6 PTS
IND82H-070167  1 PT
IND87B-070678  1 PT
IND83E-070273  6 PTS
IND81H-070063  9 PTS
IND83K-070319  1 PT
IND81L-070072  1 PT

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS  35,280 lbs

LIONEL KOONS

EXPLO SYSTEMS INC
## HPLC PROPELLANT STABILITY REPORT

Lot Number: IND89D071039  
D533 / M6 propellant

Date of analysis: Date: 21 SEP 2012

Other Information
M6 Propellant

Sample Data
Sample #: 0.50 g  
Solvent: 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.878</td>
<td>38</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.469</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.366</td>
<td>516.6</td>
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<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.936</td>
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<td>2NDPA</td>
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<td>200.0</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.019</td>
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</table>

<table>
<thead>
<tr>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.573

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst

MIKE KILE  
Avg. Tot. Stabilizers: 0.57 %

### Analyst Signature

Stable: YES  
Unstable:  
Comments: CATEGORY: A

### Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 10 AUGUST 2012

## Sample Data

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Conc.</th>
<th>Ret</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50</td>
<td>g</td>
<td>100 ml</td>
<td>ACN</td>
<td></td>
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</table>

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.882</td>
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<td>2,2' DNDPA</td>
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<td>714.1</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.173</td>
<td>1371.4</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

### Avg. % Stabilizer for Lot

1.339

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Analyst Signature:** [Signature]

**Avg. Tot. Stabilizers:** 1.34 %

**Stable:** YES | Unstable

**Comments:**  
**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND83K070319

## Date of analysis: 1 FEB 2011

### Other Information

- **Sample Data:**
  - Sample 
  - #1
  - 0.5000 g
  - 100 ml
  - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>2244</td>
<td>0.201</td>
<td></td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>28030.5</td>
<td>2.185</td>
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<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>71.6</td>
<td>0.000</td>
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<tr>
<td>4'NDPA</td>
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<td>11.73</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>12.459</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
<td>319.5</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>438.3</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.476

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile

**Avg. Tot. Stabilizers:** 2.48%

**Analyst Signature:**

**Stable:** YES
**Unstable:**

**Comments:** CATEGORY: A

**Lab. Supervisor Signature:**

**Actions to be Taken:**

---

Form #158

Original Print Date: 07/19/2010

EXP_001747
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070167  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 6 JAN 2012

**Other Information**  
M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stabilizer</strong></td>
<td><strong>Conc. Ret Intg.</strong></td>
</tr>
<tr>
<td>4,4'DNDPA</td>
<td>50.0 0.65 119.1</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0 3.304 1019.8</td>
</tr>
<tr>
<td>2,2'DNDPA</td>
<td>50.0 4.943 1734.6</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 7.018 1103.9</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 8.439 1782.5</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0 9.513 3182.1</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 10.956 6219.8</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 11.669 1532.4</td>
</tr>
</tbody>
</table>

0.349

Avg. % Stabilizer for Lot

0.349

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
TAKISHA DICKERSON

**Avg. Tot. Stabilizers**  
0.35 %

**Analyst Signature**

**Stable**  
YES Unstable

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**

Form #150  
020114  
EXP_001748
HPLC PROPELLANT STABILITY REPORT

Lot Number: IND82E070115
D533 / M6 propellant

Date of analysis: 2 SEPTEMBER 2011

Solvent: Sample Data
#1 0.50 g 100 ml ACN

M6 Propellant

Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg.</th>
<th>Area 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.631</td>
<td>119.7</td>
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</tr>
<tr>
<td>2,4-DNDPA</td>
<td>60.0</td>
<td>3.438</td>
<td>969.4</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>60.0</td>
<td>5.235</td>
<td>1727.8</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.619</td>
<td>1043.1</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>9.163</td>
<td>1669.9</td>
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<td>10.427</td>
<td>3002.4</td>
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<tr>
<td>DPA</td>
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<td>11.969</td>
<td>5688.4</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.823</td>
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<table>
<thead>
<tr>
<th>Sample #</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area %</th>
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<tbody>
<tr>
<td></td>
<td>513.1</td>
<td>0.429</td>
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<tr>
<td></td>
<td>17.4</td>
<td>0.002</td>
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<tr>
<td></td>
<td>25268</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>77.7</td>
<td>0.005</td>
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</tr>
<tr>
<td></td>
<td>153.6</td>
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<td></td>
<td>920.8</td>
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<td></td>
<td>0</td>
<td>0.000</td>
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</tr>
</tbody>
</table>

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

Avg. % Stabilizer for Lot: 0.505

Analyst: KISHA DICKERSON
Avg. Tot. Stabilizers: 0.50%

Analyst Signature

Stable: YES  Unstable: UNSTABLE

Comments
CATEGORY: A

Lab. Supervisor Signature

Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81L070072  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 29 MAY 2012

### M6 Propellant

#### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
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<td>3.398</td>
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<td>2,2’ DNDPA</td>
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<td>5.133</td>
<td>1007.2</td>
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<td>37338</td>
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<td>2,4’ DNDPA</td>
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<tr>
<td>4NDPA</td>
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<td>8.917</td>
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<tr>
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<tr>
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<td>0.078</td>
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<td>N-NitrosoDPA</td>
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<td></td>
<td>0.000</td>
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</tbody>
</table>

### Sample #

#### Avg. % Stabilizer for Lot

0.363

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Takisha Dickerson

**Avg. Tot. Stabilizers**  
0.36 %

**Analyst Signature**

**Stable**  
YES  
Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:**  
A

**Actions to be Taken**
## STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, by (on the number of said contract meaning any person or corporation in possession of the property under the contract) agrees to convey the usual place of delivery of said destination. It is on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over any or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading referred to herein. In Uniform Freight Classification in effect on the date hereof, it this is a rail or water carrier shipment, or (2) in the applicable motor carrier classification or tariff if it is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055

**Shipper's No.:** 2892  
**Shipping Date:** 5/1/13  
**Purchase Order No.:**  
**Location No.:** 2463

**Consignee:**  
**Fed Lic.:**  
**Exp. Date:** 5/1/13

**Destination:**  
**State Lic.:**  
**Exp. Date:**

**County:**  
**Customer No.:**

**Route:**  
**Rel. No.:**

**Charge Account Of:**  
**Customer P.O. No.:**

### TRANSPORTATION OF HAZARDOUS MATERIALS

<table>
<thead>
<tr>
<th>SHIPPED No. of PCE</th>
<th>SHIPPED No. of UNITS</th>
<th>PROPER SHIPPING NAME AND HAZARD CLASS</th>
<th>RETURNED No. of PCE</th>
<th>RETURNED No. of UNITS</th>
<th>EMERGENCY RESPONSE PROCEDURE GROUP NO.</th>
<th>EXEMPTION DOT-E</th>
<th>H M</th>
<th>Placards Applied to Railcar or Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN0161, Powder, Smokeless, 1.3C, PG II</td>
<td>#112</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EXPLOSIVES 1.3</td>
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<td></td>
</tr>
</tbody>
</table>

This is to certify that the above-named materials are properly packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Signature:**  
**Invoice No.:**

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC — DAY OR NIGHT**  
IN THE USA CALL 800-424-9300  
IN CANADA (92-0040) 800-551-3635  
ELSEWHERE CALL (703) 527-9887

**Per:**  
**DOT Hazardous Material Handling Number:**  
Local Federal Explosives License No. 5-LA-119-20-1A-00057  
(Shipper)

**Permanant Address of Shipper:**  
Explo Systems, Inc.  
1600 Java Road  
Minden, LA 71055

d) 382-8700

**Received by:**  
**Date:**

**Q CONSIGNEE / Q CARRIER**  
**By:**  
**Date:**

**AUTHORIZED RECEIVER**
AUSTIN POWDER PACKING LIST

SHIPEMENT DATE 3-31-13

B/L# 2892 TRL 6810057

M-6

| IND89D-071039 | 7 PTS |
| IND85C-070512 | 2 PTS |
| IND81L-070072 | 2 PTS |
| IND85F-070587 | 8 PTS |
| IND83G-070281 | 1 PT  |
| IND81E-070022 | 1 PT  |
| IND83F-070274 | 1 PT  |
| IND83F-070278 | 6 PTS |
| IND82H-070168 | 3 PTS |
| IND86E-070617 | 8 PTS |
| IND87D-070450 | 2 PTS |
| IND83F-070276 | 1 PT  |

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
### MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

#### SECTION I - DOCUMENTATION

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. CARRIER/GOVERNMENT ORGANIZATION

3. DATE/TIME OF INSPECTION

4. LOCATION OF INSPECTION

5. OPERATOR(S) NAME(S)

6. OPERATOR(S) LICENSE NUMBER(S)

7. MEDICAL EXAMINER'S CERTIFICATE

#### SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE

<table>
<thead>
<tr>
<th>TRACTOR/TRACTOR TRAILER</th>
<th>DROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBW</td>
<td>TRL</td>
</tr>
</tbody>
</table>

11. VEHICLE NUMBER(S)

12. PART INSPECTED (X as applicable)

<table>
<thead>
<tr>
<th>ORIGIN (1)</th>
<th>ORIGIN (2)</th>
<th>SAT</th>
<th>SUNDAY</th>
<th>SAT</th>
<th>SUNDAY</th>
<th>COMMENTS (3)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>a. SPARE ELECTRICAL FUSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. HORN OPERATIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. STEERING SYSTEM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. WINDSHIELD WIPERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. MIRRORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f. WARNING EQUIPMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>g. FIRE EXTINGUISHER*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>h. ELECTRICAL WIRING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i. LIGHTS AND REFLECTORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>j. FUEL SYSTEM*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. INSPECTION RESULTS (X one)

- ACCEPTED
- REJECTED

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one)

- ACCEPTED
- REJECTED

15. REMARKS

#### SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IN ATV APPLICABLE SEGREATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPNAUL APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 836 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 826 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

26. DRIVER(S) SIGNATURE (Origin)

27. INSPECTOR SIGNATURE (Destination)

28. DRIVER(S) SIGNATURE (Destination)
## SECTION 1 - PRODUCT IDENTIFICATION

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted  
**Technical Information Phone No.:** 318.382.8700  
**For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
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<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
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<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>A</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td>B +</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>C +</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td>D +</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
<td>E</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION EQUIPMENT:

A: Goggles
B: Fire-Resistant Membrane Goggles
C: Fire-Resistant Face Shield
D: Leather Gloves
E: Safety Shoes
F: Fire-Resistant Coverall
G: Respirator

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C). Normal storage conditions should be 75°F (21°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
# HPLC PROPELLANT STABILITY REPORT

## Lot Number: IND89D071039

**D533 / M6 propellant**

**Date of analysis:** Date: 21 SEP 2012

### Other Information

**Sample Data**

| Solvent   | #1 | 0.50 g | 100 ml | ACN |

<table>
<thead>
<tr>
<th><strong>Stabilizer</strong></th>
<th><strong>Conc. Ret Intg. ppm Time Area 1</strong></th>
<th><strong>Intg. Conc. Area %</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0 0.878 38</td>
<td>188.9 0.497</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0 3.469 956.6</td>
<td>0 0.000</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0 5.366 516.6</td>
<td>21344 0.000</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0 7.936 1019.9</td>
<td>0 0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 9.415 1618.4</td>
<td>80.3 0.005</td>
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<tr>
<td>2NDPA</td>
<td>50.0 10.707 2844</td>
<td>100.2 0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 12.006 5780.2</td>
<td>973.6 0.067</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 13.019 1452.3</td>
<td>0 0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**

0.573

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**

MIKE KILE

**Avg. Tot. Stabilizers**

0.57%

**Analyst Signature**

**Stable** YES **Unstable**

**Comments**

**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC Propellant Stability Report

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 AUG 2010

### Other Information
- **Sample Data:**
  - Solvent
    - #1: 0.5000 g 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ref</th>
<th>Intg. ppm</th>
<th>Time</th>
<th>Area</th>
<th>Area %</th>
<th>Intg.</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>0</td>
<td>0.645</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>4.884</td>
<td>715.1</td>
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<td>0.000</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
<td>0</td>
<td>0.000</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>11.213</td>
<td>1155.8</td>
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<td>0.000</td>
<td>0</td>
<td>0.000</td>
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<td>4NDA</td>
<td>50.0</td>
<td>11.899</td>
<td>750.7</td>
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<td>0.000</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>2NDA</td>
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<td>12.536</td>
<td>1565</td>
<td>0</td>
<td>0.000</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>13.934</td>
<td>4151.3</td>
<td>0</td>
<td>0.000</td>
<td>0</td>
<td>0.000</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>46.7</td>
<td>0.006</td>
<td>0</td>
<td>0.651</td>
</tr>
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</table>

**Avg. % Stabilizer for Lot:** 0.651

0.30% or more is Stability Code A  
0.20%-0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Kisha Dickerson  
**Avg. Tot. Stabilizers:** 0.65 %

### Analyst Signature

**Stable**  
**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A  
**Actions to be Taken**
# HPLC Propelant Stability Report

**Lot Number:** IND86E070617  
**D533 / M6 Propellant**  
**Date of Analysis:** 18 JULY 2012

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Intg. Time</th>
<th>Intg. Area 1</th>
<th>Conc. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.863</td>
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<tr>
<td>2,4'-DNDPA</td>
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<td>3.365</td>
<td>949.7</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.081</td>
<td>2605.4</td>
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<tr>
<td>2,4'-DNPDPA</td>
<td>50.0</td>
<td>7.514</td>
<td>1047.9</td>
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</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
<td>1698.8</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.142</td>
<td>3039.5</td>
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<td>DPA</td>
<td>200.0</td>
<td>11.585</td>
<td>6044.7</td>
<td>86.1 %</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.4</td>
<td>1395.6</td>
<td>0</td>
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</table>

**Sample #**  

<table>
<thead>
<tr>
<th>Intg.</th>
<th>Conc.</th>
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<tbody>
<tr>
<td>389.2</td>
<td>0.291</td>
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<td>0</td>
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<td>22628</td>
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<td>0</td>
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<td>45.3</td>
<td>0.003</td>
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<td>80.7</td>
<td>0.003</td>
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<tr>
<td>86.1</td>
<td>0.057</td>
</tr>
<tr>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

---

**Average % Stabilizer for Lot:** 0.353

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Analyst Signature:** [Signature]

**Avg. Tot. Stabilizers:** 0.35 %  
**Stable:** YES  
**Unstable:** NO  
**Comments:** CATEGORY: A  
**Actions to be Taken:**

---

Form #15R  
Original Print Date: 07/19/2010  
EXP_001759
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070587  
**D533 / M6 propellant**

**Date of analysis:** 25 AUG 2010

- **Sample Data**
  - **Sample #1**
  - **Solvent:** ACN
  - **Mass:** 0.5000 g
  - **Volume:** 100 ml

#### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>2.177</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>5.001</td>
<td>961.7</td>
<td>0</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>7.038</td>
<td>2567.5</td>
<td>14427.7</td>
</tr>
<tr>
<td>2,4'-DNDA</td>
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<td>9.931</td>
<td>938.5</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.434</td>
<td>1325.8</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>12.813</td>
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<td>DPA</td>
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<td>14.19</td>
<td>4886.9</td>
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<td>75.0</td>
<td>15.18</td>
<td>1296.7</td>
<td>0</td>
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</tbody>
</table>

**Avg. % Stabilizer for Lot:** 1.262

- **0.30% or more is Stability Code A**
- **0.20% - 0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst:** Kisha Dickerson

**Avg. Tot. Stabilizers:** 1.26%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**D533 / M6 propellant**  
**Date of analysis:** Date: 10 AUGUST 2012

## Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
</tbody>
</table>

## M6 Propellant

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Inlg.</th>
<th>ppm</th>
<th>Time</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.882</td>
<td>8.8</td>
<td>112.9</td>
<td>1.283</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.343</td>
<td>910.9</td>
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<td>0.000</td>
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<td></td>
<td></td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.034</td>
<td>3858.6</td>
<td>22576</td>
<td>0.000</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.363</td>
<td>1013.2</td>
<td>0</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.784</td>
<td>1647.3</td>
<td>59.7</td>
<td>0.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>9.95</td>
<td>2919.6</td>
<td>95.5</td>
<td>0.003</td>
<td></td>
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<td></td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.386</td>
<td>5857.1</td>
<td>714.1</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.173</td>
<td>1371.4</td>
<td>0</td>
<td>0.000</td>
<td></td>
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<td></td>
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</tbody>
</table>

### Avg. % Stabilizer for Lot

<table>
<thead>
<tr>
<th>Avg. % Stabilizer for Lot</th>
<th>1.339</th>
</tr>
</thead>
</table>

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**Analyst:** Takisha Dickerson  
**Analyst Signature:** [Signature]

## Lab. Supervisor Signature

[Signature]

## Avg. Tot. Stabilizers

<table>
<thead>
<tr>
<th>Avg. Tot. Stabilizers</th>
<th>1.34 %</th>
</tr>
</thead>
</table>

## Stable

<table>
<thead>
<tr>
<th>Stable</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
</tr>
</tbody>
</table>

## Unstable

**Comments:** CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 27 JULY 2011

**Other Information**  
M6 Propellant  
Solvent  
Sample Data  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
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<tr>
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<td>3.477</td>
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</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>7.842</td>
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<tr>
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<td>9.392</td>
<td>1634.2</td>
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<td>2NDPA</td>
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<td>10.693</td>
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<td>DPA</td>
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<td>12.201</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>13.103</td>
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<table>
<thead>
<tr>
<th>Concentration</th>
<th>Intg.</th>
<th>Concentration</th>
<th>Area</th>
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<td>622.1</td>
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<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22209</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
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<td>0</td>
<td>0.000</td>
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</tr>
<tr>
<td></td>
<td>48.5</td>
<td>0.003</td>
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<tr>
<td></td>
<td>98.3</td>
<td>0.003</td>
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<td>451.4</td>
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<tr>
<td></td>
<td>0</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 0.590

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.59 %

**Analyst Signature**  
**Stable:** YES Unstable

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPellant Stability Report

**Lot Number:** IND83F070276  
**D533 / M6 propellant**

**Date of analysis:** Date: 4 Sep 2012

**Sample Data**
- **Solvent:** ACN
- **Sample:** #1
- **Weight:** 0.50 g
- **Volumne:** 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
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<td>50.0</td>
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<td>5.22</td>
<td>777.3</td>
<td>23990</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>9.134</td>
<td>1586.8</td>
<td>40.6</td>
<td>0.003</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.417</td>
<td>2826.3</td>
<td>88.7</td>
<td>0.003</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.797</td>
<td>5671.5</td>
<td>812.6</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.757</td>
<td>1337.5</td>
<td>0</td>
<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 1.249

- 0.30% or more is Stability Code A
- 0.20% - 0.29% is Stability Code C
- Less than 0.20% is Stability Code D

**Analyst Signature: Mike Kile**

**Avg. Tot. Stabilizers:** 1.25 %

**Stable:** YES  Unstable

**Comments:** CATEGORY: A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070278  
**Date of analysis:**  
**D533 / M6 propellant**  
**Date:** 11 JULY 2012  
**Other Information**  
**M6 Propellant**  
**Sample Data**  
**Solvent**  
#1  
0.50 g  
100 ml  
ACN

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Intg.</th>
<th>Conc. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.803</td>
<td>32.3</td>
<td>256.2</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.397</td>
<td>945.1</td>
<td>0.793</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.155</td>
<td>1995.1</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.525</td>
<td>949.2</td>
<td>21574</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>9.04</td>
<td>1580.4</td>
<td>0.000</td>
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<td>2NDPA</td>
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<td>10.278</td>
<td>2854</td>
<td>89.7</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.761</td>
<td>5473.7</td>
<td>35.4</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.606</td>
<td>1672.4</td>
<td>589.5</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.843

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.84 %  
**Analyst Signature**  
**Stable** YES Unstable  
**Comments** CATEGORY: A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**D533 / M6 propellant**

**Date of analysis:** Date: 4 April 2012

Other Information

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 0.5 g</td>
<td>ACN 100 ml</td>
</tr>
</tbody>
</table>

M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm Time Area 1</td>
</tr>
<tr>
<td>4,4' DNDPA</td>
<td>50.0 0.881 40.9</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0 3.279 928</td>
</tr>
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<td>2,2' DNDPA</td>
<td>50.0 4.66 26957</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0 6.571 992.8</td>
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<td>4NDPA</td>
<td>50.0 7.798 1682.7</td>
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<tr>
<td>2NDPA</td>
<td>50.0 8.806 2938.9</td>
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<tr>
<td>DPA</td>
<td>200.0 10.221 5774.5</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0 10.895 1475.9</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: 0.312

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst** Takisha Dickerson  
**Avg. Tot. Stabilizers** 0.31 %

**Analyst Signature**

**Stable** YES Unstable

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**D533 / M6 propellant**

**Date of analysis:** 1 FEB 2011

### Sample Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.500 g</td>
<td>100 ml ACN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>2540.4</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>31231.4</td>
</tr>
<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>51.5</td>
</tr>
<tr>
<td>2,4’ DNOPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>143.2</td>
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<td>4NNDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
<td>0.0</td>
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<td>50.0</td>
<td>13.939</td>
<td>5852.1</td>
<td>838.5</td>
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<tr>
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<td>200.0</td>
<td>15.022</td>
<td>1753.1</td>
<td>0.0</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.932</td>
<td>2535.1</td>
<td>985.4</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 2.875

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Mike Kile  
**Avg. Tot. Stabilizers:** 2.88 %

**Analyst Signature**

**Stable**

**Comments**

**Lab. Supervisor Signature**

**CATEGORY:** A

**Actions to be Taken**
**HPLC PROPELLANT STABILITY REPORT**

**Lot Number:** IND81L070072  
**Date of analysis:** 29 MAY 2012  
**Solvent:** ACN  
**Sample Data:**  
| Sample Data | #1 | 0.50 g | 100 ml |

**Stabilizer**  
<table>
<thead>
<tr>
<th>Concentration ppm</th>
<th>Retention Time</th>
<th>Int. Area</th>
<th>Int. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-DNDPA</td>
<td>50.0</td>
<td>0.86</td>
<td>235.9</td>
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<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.398</td>
<td>913.2</td>
</tr>
<tr>
<td>2,2’-DNDPA</td>
<td>50.0</td>
<td>5.133</td>
<td>1007.2</td>
</tr>
<tr>
<td>2,4’-DNDPA</td>
<td>50.0</td>
<td>7.409</td>
<td>1002.4</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.917</td>
<td>1612.8</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0</td>
<td>10.112</td>
<td>2882.2</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.807</td>
<td>5642.3</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.414</td>
<td>1351.4</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.363

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.36 %

**Analyst Signature**  
**Stable:** YES  
**Unstable:**  
**Comments:** CATEGORY: A

**Lab. Supervisor Signature**  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81E070022  
**D533 / M6 propellant**

**Date of analysis:** Date: 23 AUG 2010

## Other Information

**Sample Data**
- **Solvent**
  - 

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Intg.</th>
<th>Conc.</th>
<th>Area</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>DNP</td>
<td>50.0</td>
<td>4.884</td>
<td>815.1</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>2.174</td>
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<td>DNP</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<tr>
<td>DNP</td>
<td>50.0</td>
<td>11.213</td>
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<td>0.000</td>
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<td>0.000</td>
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<tr>
<td>DNP</td>
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<td>11.899</td>
<td>750.7</td>
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<td>0.000</td>
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<tr>
<td>DNP</td>
<td>50.0</td>
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<td>0</td>
<td>0</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<tr>
<td>DNP</td>
<td>200.0</td>
<td>13.934</td>
<td>4151.3</td>
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<td>0</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<td>DNP</td>
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<td>451.1</td>
<td>0.063</td>
<td></td>
<td></td>
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</table>

**Avg. % Stabilizer for Lot:** 2.237

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
Kisha Dickerson

**Avg. Tot. Stabilizers:** 2.24%

**Analyst Signature**

**Stable**

**YES**

**Unstable**

**Comments**

**CATEGORY:** A

**Actions to be Taken**

***Form #158***

***Original Print Date: 07/19/2010***

020134

**EXP_001768***
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, end destined as indicated below.

Ch said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to carry a usual place of delivery of said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1600 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect Prepaid

Location No.

Consignment to: Austin Powder Co.
Fed Lic.

Destination:

State

County

Route

Charge Account of

Customer P.O. No.

Rel. No.

Proper Shipping Name

UN0161, Powder, Smokeless, 1.3C, PG II

#112 EXPLOSIVES 1.3

Placards Applied to Railcar or Motor Vehicle

This to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature:

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTEC — DAY OR NIGHT IN THE USA CALL 800-424-9300 IN CANADA (ERF #2-040) 800-661-3636 ELSEWHERE CALL (703) 527-3887

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By:

Date

Per

Q CONSIGNEE

Q CARRIER

By

AUTHORIZED RECEIVER

CONTAINS HAZARDOUS MATERIALS

EXP_001769
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**Date of analysis:** D533 / M6 propellant  
**Date:** 23 AUG 2010

### Other Information
- **Sample Data**
  - Sample #1
  - Solvent: ACN
  - Weight: 0.5000 g
  - Volume: 100 ml

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg.</th>
<th>Conc. Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNPD</td>
<td>50.0</td>
<td>4.884</td>
<td>715.1</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2,4-DNPD</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
<td>5124.3</td>
<td>0.645</td>
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</tr>
<tr>
<td>2,2' DNPD</td>
<td>50.0</td>
<td>11.213</td>
<td>1155.8</td>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td>NNDP</td>
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<td>11.899</td>
<td>750.7</td>
<td>0</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>2DPA</td>
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<td>12.536</td>
<td>1565.0</td>
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<td>0.000</td>
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</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>13.934</td>
<td>4151.3</td>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>46.7</td>
<td>0.006</td>
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</table>

### Avg. % Stabilizer for Lot
- **0.651**

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
- **Kisha Dickerson**

### Analyst Signature
- **Stable**
- **Unstable**

### Comments
- **CATEGORY:** A

### Lab. Supervisor Signature

### Actions to be Taken

---

**Form #150**

**020138**

**EXP_001772**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**Date of analysis:**  
**Other Information:** M6 Propellant  
**Sample Data #1:** 0.50 g  
**Solvent:** ACN

### Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
<th>Time</th>
<th>Intg.</th>
<th>Area 1</th>
<th>Area %</th>
<th>Intg.</th>
<th>Conc. Area %</th>
<th>Sample #</th>
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<tr>
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<tr>
<td>2,2'-DNDPA</td>
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<tr>
<td>4NDPA</td>
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<td>0.049</td>
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<td></td>
<td>1.339</td>
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<td></td>
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</table>

**Avg. % Stabilizer for Lot:** 1.339

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 1.34 %  
**Analyst Signature:**  
**Lab. Supervisor Signature:**

**Stable:** YES  
**Unstable:**

**Comments:** CATEGORY: A

**Actions to be Taken:**
STRAIGHT BILL OF LADING

RECEIVED, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading.

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) consigned, and destined as indicated below, to said carrier (the word carrier being understood throughout this contract meaning any person or corporation in possession of the property under the contract) agrees to cury a usual place of delivery of said destination. It on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of said property over all or any portion of said route to destination, and to each party at any time interested in all or any of said property, that every service being performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

Shipper: Explo Systems, Inc.
1800 Java Road
Minden, LA 71055

At

By

Freight Charges: Collect Prepaid

Location No.

Consignment to

Destination

County

Route

Charge Account of

Customer P.O. No.

Shippers No.

Shipping Date

Purchase Order No.

ON # 215589

(Please or Street Address of Consignee -- For purposes of notification only)

Fed Lic. Exp. Date

State Exp. Date

Customer No.

Rel. No.

EX0161, Powder, Smokeless, 1.3C, PG II

#112 EXPLOSIVES 1.3

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Signature

Invoice No.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMCLRD -- DAY OR NIGHT
IN THE USA CALL 800-424-1930 IN CANADA (ERP #2-0040) 800-551-3650 ELSEWHERE CALL (703) 577-3887

Permanent Address of Shipper:

Explo Systems, Inc.

*500 Java Road

Jan, Louisiana 71055

3182-8700

Per

DOT Hazardous Material Handling Number

Local Federal Explosives License No. 5-LA-119-20-1A-00057

(Shipper)

I have been offered placards identifying the shipment as Specified in 49CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

Received By

Date

Q CONSIGNOR Q CARRIER

By

AUTHORIZED RECEIVER

Dated

020140

CONTAINS HAZARDOUS MATERIALS

EXP_001774
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 3-31-13

B/L# 2894 TRL 18483

M-6

IND86E-070617  12 PTS
IND83G-070281  4 PTS
IND85C-070512  1 PT
IND85F-070588  1 PT
IND87D-070450  6 PTS
IND84K-070452  4 PTS
IND81D-070019  7 PTS
IND81D-070015  1 PT
IND82H-070168  6 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
MOTOR VEHICLE INSPECTION (TRANSPORTING HAZARDOUS MATERIALS)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

1. BILL OF LADING/TRANSPORTATION CONTROL NUMBER

   2574

SECTION I - DOCUMENTATION

2. CARRIER/GOVERNMENT ORGANIZATION

   RKV

3. DATE/TIME OF INSPECTION

   7/3/13

4. LOCATION OF INSPECTION

   EDNA SYSTEMS INC

5. OPERATOR(S) NAME(S)

   225/5

6. OPERATOR(S) LICENSE NUMBER(S)

   P320825490C60

7. MEDICAL EXAMINER'S CERTIFICATE

   225/5

8. (X if satisfactory at origin)

a. MILITARY HAZMAT ENDORSEMENT

   YES

b. DRIVER'S VEHICLE INSPECTION REPORT

   NO

c. TRUCK/TRACTOR

   f

d. TRAILER

   f

SECTION II - MECHANICAL INSPECTION

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

10. TYPE OF VEHICLE(S)

   TRACTOR/TRACTOR TRAILER

   DRYOM

   T3174

   18463

11. VEHICLE NUMBER(S)

   020142

12. PART INSPECTED

   (X as applicable)

   a. SPARE ELECTRICAL FUSES
     SAT UNSAT SAT UNSAT
   b. HORN OPERATIVE
     SAT UNSAT SAT UNSAT
   c. STEERING SYSTEM
     SAT UNSAT SAT UNSAT
   d. WINDSHIELD WIPERS
     SAT UNSAT SAT UNSAT
   e. MIRRORS
     SAT UNSAT SAT UNSAT
   f. WARNING EQUIPMENT
     SAT UNSAT SAT UNSAT
   g. FIRE EXTINGUISHER
     SAT UNSAT SAT UNSAT
   h. ELECTRICAL WIRING
     SAT UNSAT SAT UNSAT
   i. LIGHTS AND REFLECTORS
     SAT UNSAT SAT UNSAT
   j. FUEL SYSTEM
     SAT UNSAT SAT UNSAT

   k. EXHAUST SYSTEM
     SAT UNSAT SAT UNSAT
   l. BRAKE SYSTEM
     SAT UNSAT SAT UNSAT
   m. SUSPENSION
     SAT UNSAT SAT UNSAT
   n. COUPLING DEVICES
     SAT UNSAT SAT UNSAT
   o. CARGO SPACE
     SAT UNSAT SAT UNSAT
   p. LANDING GEAR
     SAT UNSAT SAT UNSAT
   q. TIRES, WHEELS, RIMS
     SAT UNSAT SAT UNSAT
   r. TAILGATED OORS
     SAT UNSAT SAT UNSAT
   s. TARPADIN
     SAT UNSAT SAT UNSAT
   t. OTHER (Specify)
     SAT UNSAT SAT UNSAT

13. INSPECTION RESULTS (X one)

   ACCEPTED

   REJECTED

   (If rejected give reason under “Remarks”. Equipment will be approved if deficiencies are corrected prior to loading.)

14. SATELLITE MOTOR SURVEILLANCE SYSTEM: (X one)

   ACCEPTED

   REJECTED

15. REMARKS

   [Signatures]

16. INSPECTOR SIGNATURE (Origin)

   [Signatures]

17. INSPECTOR SIGNATURE (Destination)

   [Signatures]

SECTION III - POST LOADING INSPECTION

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

18. LOADED IAW APPLICABLE SEGREGATION/COMPATIBILITY TABLE OF 49 CFR

19. LOAD PROPERLY SECURED TO PREVENT MOVEMENT

20. SEALS APPLIED TO CLOSED VEHICLE; TARPADIN APPLIED ON OPEN EQUIPMENT

21. PROPER PLACARDS APPLIED

22. SHIPPING PAPERS/DD FORM 536 FOR GOVERNMENT VEHICLE SHIPMENTS

23. COPY OF DD FORM 628 FOR DRIVER

24. SHIPPED UNDER DOT SPECIAL PERMIT 868

25. INSPECTOR SIGNATURE (Origin)

   [Signatures]

26. DRIVER(S) SIGNATURE (Origin)

   [Signatures]

27. INSPECTOR SIGNATURE (Destination)

   [Signatures]

28. DRIVER(S) SIGNATURE (Destination)

   [Signatures]
GUIDE EXPLOSIVES* - DIVISION 1.1, 1.2, 1.3, 1.5 OR 1.6, CLASS A OR B

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- MAY EXPLODE AND THROW FRAGMENTS 1600 meters (1 MILE) OR MORE IF FIRE REACHES CARGO.
- For information on "Compatibility Group" letters, refer to Glossary section.

HEALTH
- Fire may produce irritating, corrosive and/or toxic gases.

PUBLIC SAFETY
- CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Isolate spill or leak area immediately for at least 500 meters (1/3 mile) in all directions.
- Move people out of line of sight of the scene and away from windows.
- Keep unauthorized personnel away.
- Stay upwind.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters’ protective clothing will only provide limited protection.

EVACUATION
Large Spill
- Consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire
- If rail car or trailer is involved in a fire and heavily encased explosives such as bombs or artillery projectiles are suspected, ISOLATE for 1600 meters (1 mile) in all directions; also, initiate evacuation including emergency responders for 1600 meters (1 mile) in all directions.
- When heavily encased explosives are not involved, evacuate the area for 800 meters (1/2 mile) in all directions.

* For information on "Compatibility Group" letters, refer to the Glossary section.

ERG2008 EXPLOSIVES* - DIVISION 1.1, 1.2, 1.3, 1.5 OR 1.6, CLASS A OR B

EMERGENCY RESPONSE

FIRE
Cargo Fire
- DO NOT fight fire when fire reaches cargo! Cargo may EXPLODE!
- Stop all traffic and clear the area for at least 1600 meters (1 mile) in all directions and let burn.
- Do not move cargo or vehicle if cargo has been exposed to heat.

Tire or Vehicle Fire
- Use plenty of water – FLOOD IT! If water is not available, use CO₂, dry chemical or dirt.
- If possible, and WITHOUT RISK, use unmanned hose holders or monitor nozzles from maximum distance to prevent fire from spreading to cargo area.
- Pay special attention to tire fires as re-ignition may occur. Stand by with extinguisher ready.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- DO NOT OPERATE RADIO TRANSMITTERS WITHIN 100 meters (330 feet) OF ELECTRIC DETONATORS.
- DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

FIRST AID
- Move victim to fresh air. Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

* For information on "Compatibility Group" letters, refer to the Glossary section.
# MATERIAL SAFETY DATA SHEET

**PROPELLANT (Wetted)**

**SECTION I - PRODUCT IDENTIFICATION**

**PRODUCT NAME:** Propellant, Explosive, Solid, Wetted

**Technical Information Phone No.:** 318 382.8700

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARDS</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>4</td>
<td>[B]</td>
</tr>
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</table>

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

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<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
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</thead>
<tbody>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td>A</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>B</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td>C</td>
</tr>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>D</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION EQUIPMENT

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATT 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V – TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:
Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.
Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  |  **D533 / M6 propellant**

**Date of analysis:**  |  **Date:** 23 AUG 2010

### Other Information
- **M6 Propellant**

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area</th>
<th>Sample #</th>
<th>Samples</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0</td>
<td></td>
<td>0</td>
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</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>4.884</td>
<td>715.1</td>
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<td>0.000</td>
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<tr>
<td>2,2’ DNDPA</td>
<td>50.0</td>
<td>9.663</td>
<td>794.8</td>
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<td>0.845</td>
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<tr>
<td>2,4’ DNDPA</td>
<td>50.0</td>
<td>11.213</td>
<td>1155.8</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>11.899</td>
<td>750.7</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>12.536</td>
<td>1565</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>13.934</td>
<td>4151.3</td>
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<td>0.000</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td></td>
<td>46.7</td>
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</table>

### Avg. % Stabilizer for Lot
- **0.651**

0.30% or more is Stability Code A
0.20% - 0.29% is Stability Code C
Less than 0.20% is Stability Code D

### Analyst
- **Kisha Dickerson**

### Analyst Signature

### Avg. Tot. Stabilizers
- **0.65 %**

### Lab. Supervisor Signature

### Stable
- **YES**

### Unstable
- **Unstable**

### Comments
- **CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070617

**D533 / M6 propellant**

**Date of analysis:**

**Sample Data**

- **Solvent**
  - #1
  - 100 ml
  - ACN

**Other Information**

- **M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Conc. Area %</th>
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</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>0.883</td>
<td>839.2</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>0.291</td>
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<tr>
<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>3.365</td>
<td>949.7</td>
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<tr>
<td>2,2'-DNDPA</td>
<td>50.0</td>
<td>5.091</td>
<td>2605.4</td>
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<td></td>
<td></td>
<td></td>
<td>0.000</td>
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<tr>
<td>2,4'-DNDA</td>
<td>50.0</td>
<td>7.514</td>
<td>1047.9</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.946</td>
<td>1698.8</td>
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<td>2NDPA</td>
<td>50.0</td>
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<td>1395.6</td>
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**Avg. % Stabilizer for Lot:** 0.353

0.30% or more is Stability Code A
0.20% -0.29% is Stability Code C
Less than 0.20% is Stability Code D

**Analyst**

Takisha Dickerson

**Avg. Tot. Stabilizers:** 0.35%

**Analyst Signature**

**Comments**

- **CATEGORY:** A

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85F070588  
**Date of analysis:** Date: 20 Dec 2010

### Other Information
- **M6 Propellant**

### Sample Data
- **Solvent**  
  - #1 0.5000 g  
  - 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>Time</td>
<td>Area</td>
<td></td>
<td>Area</td>
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<td>%</td>
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<tr>
<td>4,4'-DNDA</td>
<td>50.0</td>
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<td>2,4-DNDA</td>
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<td>2,2'-DNDA</td>
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<td>7.699</td>
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<td>2,4'-DNDA</td>
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<td>4NDPA</td>
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<td>15.189</td>
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<td>DPA</td>
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<td>18.069</td>
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<td>0.000</td>
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### Avg. % Stabilizer for Lot
- 1.814

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
- Kisha Dickerson

### Analyst Signature
- Stable YES Unstable

### Comments
- CATEGORY: A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**Date of analysis:**

**Sample Data**

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<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
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<tbody>
<tr>
<td>#1</td>
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<td></td>
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</tbody>
</table>

**Solvent**

**Other Information**

**M6 Propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td></td>
</tr>
<tr>
<td>4,4'DNDPA</td>
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<td>0.882</td>
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<td>12.173</td>
<td>1371.4</td>
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</table>

**Intg. % Stabilizer for Lot**

| Intg. % Stabilizer for Lot | 1.339 |

**Analyst**

**Takisha Dickerson**

**Avg. Tot. Stabilizers**

**1.34 %**

**Stable**

**YES**  
**Unstable**

**Comments**

**CATEGORY:**

**A**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84K070452  
**D533 / M6 propellant**

**Date of analysis:** Date: 13 AUGUST 2012

**Other Information**

<table>
<thead>
<tr>
<th>Sample Data</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>0.50 g</td>
</tr>
<tr>
<td></td>
<td>100 ml</td>
</tr>
<tr>
<td></td>
<td>ACN</td>
</tr>
</tbody>
</table>

**M6 Propellant**

**Standards (ERG-006)**

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Area %</th>
<th>Intg.</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>0.874</td>
<td>41.1</td>
<td></td>
<td>237.6</td>
<td>0.578</td>
</tr>
<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>3.363</td>
<td>1017.6</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>5.079</td>
<td>4566.2</td>
<td></td>
<td>22977</td>
<td>0.000</td>
</tr>
<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>7.471</td>
<td>1126.4</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.907</td>
<td>1830.9</td>
<td></td>
<td>53.4</td>
<td>0.003</td>
</tr>
<tr>
<td>2NDA</td>
<td>50.0</td>
<td>10.084</td>
<td>3271.2</td>
<td></td>
<td>114.5</td>
<td>0.004</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
<td>11.54</td>
<td>6654.9</td>
<td></td>
<td>610.4</td>
<td>0.037</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.349</td>
<td>1509.1</td>
<td></td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.622

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.62 %

**Analyst Signature:**

**Comments:** CATEGORY: A

**Actions to be Taken:**

---

**Lab. Supervisor Signature:**

Form #158  
Original Print Date: 07/19/2010  
EXP_001787
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83G070281  
**Date of analysis:** Date: 4 April 2012  
**Other Information:** M6 Propellant

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Concentration</td>
</tr>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>2,2'-DNDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>2,4'-DNDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>4NDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>2NDPA</td>
<td>50.0 ppm</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0 ppm</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0 ppm</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.312

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Avg. Tot. Stabilizers:** 0.31%

**Analyst Signature**

**Stable**  
**Unstable**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82H070168  
**Date of analysis:** 1 FEB 2011  
**D533 / M6 propellant**

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.156</td>
<td>1116</td>
<td>2540.4</td>
<td>0.228</td>
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<tr>
<td>2,4-DNDA</td>
<td>50.0</td>
<td>9.388</td>
<td>1191.2</td>
<td>31231.4</td>
<td>2.622</td>
</tr>
<tr>
<td>2,2' DNDPA</td>
<td>50.0</td>
<td>10.987</td>
<td>1694.7</td>
<td>51.5</td>
<td>0.000</td>
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<tr>
<td>2,4' DNDPA</td>
<td>50.0</td>
<td>11.73</td>
<td>1272.3</td>
<td>143.2</td>
<td>0.011</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>12.459</td>
<td>2443.3</td>
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<tr>
<td>ZNDPA</td>
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<td>13.939</td>
<td>5862.1</td>
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<tr>
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<td>15.022</td>
<td>1735.1</td>
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<td>0.000</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.832</td>
<td>2535.1</td>
<td>985.4</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot: **2.875**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
**Mike Kile**  
**Avg. Tot. Stabilizers:** **2.88 %**

### Analyst Signature
**Stable:** YES  
**Unstable:**

### Lab. Supervisor Signature
**Comments:**  
**CATEGORY:** A  
**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**  
**Date of analysis:**  
**Sample Data**  
**Solvent**  
**Other Information**  
**M6 Propellant**  
**Date:** 29 MAY 2012

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. Ret</th>
<th>Intg. Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
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<td>2,4-DNDPA</td>
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<td>2,4’ DNDPA</td>
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<td>7.409</td>
<td>1002.4</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>8.917</td>
<td>1612.8</td>
<td>186.9</td>
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<tr>
<td>2NDPA</td>
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<td>10.112</td>
<td>2882.2</td>
<td>262.1</td>
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<td>11.607</td>
<td>5642.3</td>
<td>917.9</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>12.414</td>
<td>1351.4</td>
<td>0.000</td>
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</table>

Avg. % Stabilizer for Lot: 0.309

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Analyst Signature:**  
**Avg. Tot. Stabilizers:** 0.31 %  
**Stable:** YES  
**Unstable:**  
**Comments:** CATEGORY: A  
**Actions to be Taken:**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070015  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 20 OCT 2010

## Other Information
- Solvent: ACN
- Sample Data:  
  - Sample #1: 0.5000 g, 100 ml

## Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc.</th>
<th>Ret Time</th>
<th>Intg. Area 1</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-DNDPA</td>
<td>50.0</td>
<td>5.024</td>
<td>281.6</td>
<td>2363.4</td>
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<tr>
<td>2,4-DNDPA</td>
<td>50.0</td>
<td>10.59</td>
<td>329</td>
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<td>2,2'-DNDPA</td>
<td>50.0</td>
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<td>2,4'-DNDPA</td>
<td>50.0</td>
<td>12.67</td>
<td>275.3</td>
<td>35.7</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
<td>13.632</td>
<td>664.1</td>
<td>0</td>
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<td>N-NitrosoDPA</td>
<td>75.0</td>
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<td>329.9</td>
<td>158.8</td>
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</table>

## Analyst
- Kisha Dickerson

## Analyst Signature

## Lab. Supervisor Signature

## Avg. Tot. Stabilizers: 0.85%

### Comments
- **CATEGORY:** A

### Actions to be Taken

---

020157  
EXP_001791
## Straight Bill of Lading

**RECEIVED**, subject to the classification and tariffs in effect on the date of the issue of this Original Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) at Orland, and further as noted below, is to be carried by the railroad company as indicated throughout this contract meaning any person or corporation in possession of the property under the contract agrees to carry the same in the usual place of delivery of said destination. It is agreed, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each of all or any of the said property over all or any portion of said route to destination, and as to each party at any time interested in said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading Set forth (1) in Uniform Freight Classification in effect on the date hereof. If this is a rail or railroad shipment, or (2) in the applicable motor carrier classification or tariff it this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accept for himself and his assigns.

**Shipper:** Explo Systems, Inc.  
1600 Java Road  
Mindien, LA 71055  

**Shipper's No.:** 2896

**Shipping Date:** 9/2/13

**Purchase Order No.:** 7/25/2013

**Location No.:**

**Freight Charges:** Collect

<table>
<thead>
<tr>
<th>Consigned to</th>
<th>Fed Lic.</th>
<th>Exp. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5/1/13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Destination</th>
<th>State</th>
<th>Exp. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5/1/13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>County</th>
<th>Customer No.</th>
<th>Rel. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Charge Account of

**Customer P.O. No.:**

**Rel. No.:**

<table>
<thead>
<tr>
<th>SHIPPED</th>
<th>SHIPPED</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of PCS</td>
<td>No. of UNITS</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
</tbody>
</table>

### Proper Shipping Name and Hazard Class

**UN0161, Powder, Smokeless, 1.3C, PG II**

<table>
<thead>
<tr>
<th>RETURNED</th>
<th>RETURNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of PCS</td>
<td>No. of UNITS</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
</tbody>
</table>

### Exemption DOT-E H M

**EXPLOSIVES 1.3**

![Received Stamp]

**RECEIVED** APR. 2, 2013

**AUSTIN POWDER COMPANY EAST CAMDEN PLANT**

This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

**Signature:**

**Invoice No.:**

For Chemical, Emergency, Spill, Leak, Fire, Exposure or Accident Call Chemtrec — Day or Night  
In the USA call 800-424-9300  
In Canada (ERP #2-0040) 800-581-3636  
Elsewhere call (703) 527-3687

I have been offered placards identifying the shipment as specified in 49 CFR Subpart F of Part 172. I have received the above goods in apparent good order and condition.

**Received By:**

**By:**

**Authorized Receiver:**

**Invoice No.:**

**Signature:**

**Date:** 4-2-13

**Per:**

**Local Federal Explosives License No.:** 5-LA-119-20-1A-00067  
(Shipper)

**020158**

**CONTAINS HAZARDOUS MATERIALS**

**EXP_001792**
AUSTIN POWDER PACKING LIST

SHIPMENT DATE 4-2-13

B/L# 2896 TRL 6810053

M-6

IND83M-070322  8 PTS
IND82E-070115  4 PTS
IND84G-070326  3 PTS
IND86E-070616  7 PTS
IND83E-070273  2 PTS
IND87D-070450  3 PTS
IND81H-070063  3 PTS
IND87B-070678  1 PT
IND85C-070512  1 PT
IND83F-070274  2 PTS
IND81F-070015  1 PT
IND81C-070072  1 PT
IND81D-070019  1 PT
IND83M-070327  2 PTS
IND82K-070175  3 PTS

42 PTS WITH 6 FB @140 LBS PER DRUM

TOTAL 35,280 LBS

LIONEL KOONS

EXPLO SYSTEMS INC
### MOTOR Vehicle Inspection (Transporting Hazardous Materials)

This form applies to all vehicles which must be marked or placarded in accordance with Title 49 CFR.

#### SECTION I - Documentation

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2. Carrier/Government Organization

**Transport**

#### 3. Date/Time of Inspection

**4/11/13**

#### 4. Location of Inspection

**Etna, Tennessee**

#### 5. Operator(s) Name(s)

**Alan P. Alford**

#### 6. Operator(s) License Number(s)

**136334149 TY**

#### 7. Medical Examiner's Certificate

**01/14**

#### B. (X if satisfactory at origin)

<table>
<thead>
<tr>
<th>Military Hazmat Endorsement</th>
<th>EGR or Equivalent Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

#### C. Valid Lease

<table>
<thead>
<tr>
<th>Driver's Vehicle Inspection Report*</th>
<th>Copy of 49 CFR Part 397</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### D. Route Plan

<table>
<thead>
<tr>
<th>Copy of 49 CFR Part 397</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

#### SECTION II - Mechanical Inspection

All items shall be checked on empty equipment prior to loading. Items with an asterisk shall be checked on all incoming loaded equipment.

#### 10. Type of Vehicle(s)

**TRACTOR/TRACTOR TRAILER**

#### 11. Vehicle Numbers

**TID# 41771/7711 6810053**

#### 12. Part Inspected

<table>
<thead>
<tr>
<th>Original</th>
<th>Destination</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **a.** Spare Electrical Fuses
- **b.** Horn Operative
- **c.** Steering System
- **d.** Windshield Wipers
- **e.** Mirrors
- **f.** Warning Equipment
- **g.** Fire Extinguisher*
- **h.** Electrical Wiring
- **i.** Lights and Reflectors
- **j.** Fuel System*

#### 13. Inspection Results

**X** Accepted  
**X** Rejected

(If rejected give reason under "Remarks". Equipment will be approved if deficiencies are corrected prior to loading.)

#### 14. Satellite Motor Surveillance System

<table>
<thead>
<tr>
<th>Original</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Accepted**

#### 15. Remarks

#### 16. Inspector Signature (Origin)

#### 17. Inspector Signature (Destination)

**4/11/13**

#### SECTION III - Post Loading Inspection

This section applies to Commercial and Government/Military vehicles. All items will be checked prior to release of loaded equipment and shall be checked on all incoming loaded equipment.

<table>
<thead>
<tr>
<th>Original</th>
<th>Destination</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **18.** Loaded IAW Applicable Segregation/Compatibility Table of 49 CFR
- **19.** Load Properly Secured to Prevent Movement
- **20.** Seals Applied to Closed Vehicle; Tarpaulin Applied on Open Equipment
- **21.** Proper Placards Applied
- **22.** Shipping Papers/DD Form 836 for Government Vehicle Shipments
- **23.** Copy of DD Form 626 for Driver
- **24.** Shipped Under DOT Special Permit 868

#### 25. Inspector Signature (Origin)

#### 26. Driver(s) Signature (Origin)

**4/2/13**

#### 27. Inspector Signature (Destination)

#### 28. Driver(s) Signature (Destination)
**SECTION 1 - PRODUCT IDENTIFICATION**

PRODUCT NAME: Propellant, Explosive, Solid, Wetted

For Chemical Emergency (Spill, Fire, Exposure or Accident) call CHEMTREC day or night. Within the US and Canada: +1 800-424-9300. Outside the US and Canada: +1 703-527-3887 (collect calls accepted).

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Wt. %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EPA RQ (if defined)</th>
<th>DOT RQ (if defined)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>84-74-2</td>
<td>3.00</td>
<td>OSHA PEL 5 mg/m³</td>
<td>ACGIH TLV 5 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>122-39-4</td>
<td>1.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
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<tr>
<td>Potassium Sulfate</td>
<td>7778-80-5</td>
<td>2.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Nitrocellulose (flammable solid)</td>
<td>–</td>
<td>87.00</td>
<td>OSHA PEL none published</td>
<td>ACGIH TLV none published</td>
<td>EPA RQ (none defined)</td>
<td>DOT RQ (none defined)</td>
</tr>
<tr>
<td>Dinitrotoluene</td>
<td>25321-14-6</td>
<td>10.00</td>
<td>OSHA PEL 10 mg/m³</td>
<td>ACGIH TLV 10 mg/m³</td>
<td>EPA RQ 10 lbs</td>
<td>DOT RQ 10 lbs</td>
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</tbody>
</table>
SECTION II - HAZARDS IDENTIFICATION

PROPELLANT

HEALTH 2 2

FLAMMABILITY 4

PHYSICAL HAZARD 4

PERSONAL PROTECTION [B]

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

<table>
<thead>
<tr>
<th>HAZARD INDEX</th>
<th>PERSONAL PROTECTION INDEX</th>
</tr>
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<tbody>
<tr>
<td>4 = SEVERE HAZARD</td>
<td>A</td>
</tr>
<tr>
<td>3 = SERIOUS HAZARD</td>
<td>B</td>
</tr>
<tr>
<td>2 = MODERATE HAZARD</td>
<td>C</td>
</tr>
<tr>
<td>1 = SLIGHT HAZARD</td>
<td>D</td>
</tr>
<tr>
<td>0 = MINIMAL HAZARD</td>
<td>E</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION EQUIPMENT:
- A: Safety Glasses
- B: Gloves
- C: Respirator
- D: Coveralls
- E: Cold Water
- F: Cold Air
- G: BFG
- H: BFG
- I: BFG
- J: BFG
- K: BFG
- L: BFG
- M: BFG
- N: BFG
- O: BFG
- P: BFG
- Q: BFG
- R: BFG
- S: BFG
- T: BFG
- U: BFG
- V: BFG
- W: BFG
- X: BFG
- Y: BFG
- Z: BFG

Routes of Entry: Inhalation; Skin; Ingestion
Carcinogenicity: None
First Aid Measures: EYES - Immediately flush with copious amount of water (low pressure) for 15 minutes, remove contact lenses; call physician. SKIN - Wash with soap and running water. INGESTION - Contact physician immediately.
INHALATION - Remove to fresh air. Treat irritation symptomatically; call physician.
Firefighting Measures: Self-oxidizing, deluge with water. Will not be able to extinguish unless large quantity of water is used in very short time. Use NIOSH/MSHA approved SCBA and full protective equipment; evacuate area.
Unusual Fire/Explosion Hazard: Easily ignited, highly combustible; protect from fire and sparks and extreme heat.
Autoignition: 383°F (195°C)
Hazardous Combustion Products: Oxides of Carbon
Accidental Release Measures: SPILL - Clean immediately with soft (horsehair) brush and conductive rubber or plastic shovel. Use brass or other non-sparking tools and utensils. DO NOT hammer or otherwise cause impact forces to spilled material (explosion or autoignition could occur with impact force being applied).

SECTION III - HANDLING AND STORAGE

Precautions: Avoid prolonged temperature above 125°F (52°C) and 50% Humidity. Storage must conform to local, state and federal regulations, specifically: 29 CFR OSHA 1910.109; 27 CFR BATFE 55 subpart K.
Other Special Precautions: Flammable Solid...Keep away from heat, sparks, open flame...Keep containers closed...use with adequate ventilation.
Ventilation: Local and general ventilation necessary to keep air concentration below TLV's.
Personal Protective Equipment: Safety Glasses, Cotton or Leather Gloves, Fire Resistant Coveralls.

SECTION IV - PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496
Evaporation Rate: <1 (Butylacetate = 1)
Solubility in Water: negligible
Materials to Avoid: Oxides of Nitrogen and Carbon.

MSDS - Propellant
Rev. 1 – July 13, 2012
Explo Systems, Inc.
Conditions to Avoid: Open Flame, Sparks, Heat, Direct Sunlight.
Hazardous Decomposition Products: Oxides of Carbon

SECTION V - TRANSPORTATION INFORMATION

DOT Proper Shipping Name: Smokeless Powder (wetted)
Hazard Class: 1.3C
UN No. UN0161
Packing Group: II

SECTION VI - DISPOSAL CONSIDERATIONS

Disposal must be in accordance with federal, state and local regulations. Burn in open burning ground in accordance with regulatory requirements. It may also be burned in an incinerator approved for explosives.

DISCLAIMER
The information contained in this MSDS (Material Safety Data Sheet) is based upon available constituent data for the components of Propellant and is believed to be correct. However, as this information has been obtained from various sources, including the manufacturers of its components and independent laboratories, it is provided herein without warranty or representation that it is complete, accurate and can be relied upon. Explo Systems, Inc. has not attempted to conceal in any manner the deleterious aspects of this product, and makes no warranty as such. Explo Systems, Inc. cannot anticipate nor control the many situations in which this product or this information may be used; there is no guarantee that the health and safety precautions suggested herein will be proper under all conditions. It is the sole responsibility of each user of the product to determine and comply with the requirements of all applicable laws and regulations regarding its use. This information is given solely for the purposes of safety to persons and property. Any other use of this information is expressly prohibited.

AUTHOR
This MSDS was prepared by: Ferris Callihan, PE - Director Support Technology - Explo Systems, Inc. - 1600 Java Road - Minden, LA 71055 - Tel 318 382 8700 - E-mail: fcallihan@exploystems.com
CLASSIFICATION OF EXPLOSIVES
FIRST REVISION

Based upon a request by Explo Systems Inc., 1600 Java Road, Minden, LA 71055, United States the following items are classed in accordance with Section 173.56, Title 49, Code of Federal Regulations (49 CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.N. PROPER SHIPPING NAME AND NUMBER:
Powder, smokeless, UN0161

U.N. CLASSIFICATION CODE: 1.3C

REFERENCE NUMBER
EX2010040603

PRODUCT DESIGNATION/PART NUMBER
Reclaimed M6 Propellant

NOTES: This classification is only valid when the smokeless powder has been tested and found to have sufficient residual stabilizers present per US Army Safety Bulletin: "Inspection of Supplies and Equipment, Ammunition Surveillance Procedures" (SB 742-1). The following packaging methods are assigned:

Packaging Method A: Inner Packaging - Not necessary. Outer Packaging - UN 1G fiberdrum, each containing not more than one hundred and forty (140) pounds of smokeless propellant.

Packaging Method B: Inner Packaging: Flexible static-resistant reinforced plastic cloth and strapping lifting bag, each containing not more than eight hundred and eighty (880) pounds of smokeless propellant. Outer Packaging - UN 4G heavy-wall fiberboard box with a volumetric capacity of 119 gallons or less. (see 49 CFR Section 171.8 Definition for "Non-bulk packaging")

DATED: 05/05/2011

For Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety
### HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND87D070450  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 23 AUG 2010

#### Other Information

**Sample Data**  
**Solvent**  
#1  0.5000 g  100 ml  ACN

#### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. (ppm)</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4' DNDPA</td>
<td>50.0</td>
<td>4.884</td>
<td>715.1</td>
<td>0.000</td>
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<tr>
<td>2,4-DNDPA</td>
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<td>9.663</td>
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<td>50.0</td>
<td>11.899</td>
<td>750.7</td>
<td>0.000</td>
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<td>2NDPA</td>
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<td>1565</td>
<td>0.000</td>
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<tr>
<td>DPA</td>
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<td>13.934</td>
<td>4151.3</td>
<td>0.000</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>14.875</td>
<td>1080.5</td>
<td>46.7 0.006</td>
</tr>
</tbody>
</table>

Avg. % Stabilizer for Lot 0.651

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**  
**Kisha Dickerson**

**Avg. Tot. Stabilizers**  
**0.65 %**

**Analyst Signature**  
**Stable**  
**YES Unstable**

**Comments**  
**CATEGORY: A**

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND86E070616  
**Date of analysis:** Date: 19 NOV 2010  
**D533 / M6 propellant**

### Other Information
- **Sample Data**  
  - Sample #1  
  - 0.5000 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Area</th>
<th>Intg. Area %</th>
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</thead>
<tbody>
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<td>5.182</td>
<td>717.3</td>
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<td>7.635</td>
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<td>2,4' DNPD</td>
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<td>462.4</td>
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<tr>
<td>DPA</td>
<td>200.0</td>
<td>16.583</td>
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<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
<td>18.033</td>
<td>1011.7</td>
<td></td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.504

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
- **Kisha Dickerson**

### Analyst Signature

### Avg. Tot. Stabilizers
- **0.50 %**

### Stable
- **YES**  
- **Unstable**

### Comments
- **CATEGORY:** A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND85C070512  
**Date of analysis:** Date: 10 AUGUST 2012

**Other Information**

- **Solvent**
  - Sample Data #1: 0.50 g  
  - 100 ml  
  - ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’ DNDPA</td>
<td>50.0</td>
<td>0.882</td>
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<td>3858.6</td>
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<td>2,4’ DNDPA</td>
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<td>7.363</td>
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<td>50.0</td>
<td>8.784</td>
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<td>0</td>
<td>0.000</td>
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</table>

**Avg. % Stabilizer for Lot:** 1.339

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst:** Takisha Dickerson  
**Analyst Signature:**

**Avg. Tot. Stabilizers:** 1.34 %

**Stable:** YES  
**Unstable:**

**Comments:**

**Lab. Supervisor Signature:**

**Actions to be Taken:**

---

Form #158

Original Print Date: 07/19/2010

EXP_001802
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND84G070326

**D533 / M6 propellant**

**Date of analysis:**

**Date:** 3 MAY 2012

**Other Information**

**Sample Data**

<table>
<thead>
<tr>
<th>Sample</th>
<th>0.50 g</th>
<th>100 ml</th>
<th>ACN</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>M6 Propellant Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer</td>
<td>Conc.</td>
</tr>
<tr>
<td>ppm</td>
<td>Time</td>
</tr>
<tr>
<td>4,4'-DNBP</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4-DNBP</td>
<td>50.0</td>
</tr>
<tr>
<td>2,2'-DNBP</td>
<td>50.0</td>
</tr>
<tr>
<td>2,4'-DNBP</td>
<td>50.0</td>
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<tr>
<td>4NDPA</td>
<td>50.0</td>
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<tr>
<td>2NDPA</td>
<td>50.0</td>
</tr>
<tr>
<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot:** 0.364

- **0.30% or more is Stability Code A**
- **0.20% - 0.29% is Stability Code C**
- **Less than 0.20% is Stability Code D**

**Analyst:** Takisha Dickerson

**Analyst Signature**

**Avg. Tot. Stabilizers:** 0.36%

**Stable** | **YES** | **Unstable**

**Comments:**

**CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83F070274  
**D533 / M6 propellant**

**Date of analysis:** 27 JULY 2011

### Other Information
- **Sample Data**
  - #1 0.50 g 100 ml ACN

### Standards (ERG-006)

<table>
<thead>
<tr>
<th>Stabilizer</th>
<th>Conc. ppm</th>
<th>Ret Time</th>
<th>Intg. Int Area 1</th>
<th>Intg. Area</th>
<th>Conc. %</th>
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</thead>
<tbody>
<tr>
<td>4,4'-DNOPA</td>
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<td>0.694</td>
<td>112.8</td>
<td>622.1</td>
<td>0.552</td>
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<td>2,4-DNOPA</td>
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<td>3.477</td>
<td>942.8</td>
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<td>0.000</td>
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<td>2,2'-DNOPA</td>
<td>50.0</td>
<td>5.339</td>
<td>77.4</td>
<td>22209</td>
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<tr>
<td>2,4'-DNOPA</td>
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<td>9.392</td>
<td>1634.2</td>
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<td>2NDPA</td>
<td>50.0</td>
<td>10.693</td>
<td>2966.2</td>
<td>98.3</td>
<td>0.003</td>
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<tr>
<td>DPA</td>
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<td>13.103</td>
<td>1385.2</td>
<td>0</td>
<td>0.000</td>
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**Avg. % Stabilizer for Lot:** 0.590

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
- **Takisha Dickerson**

### Analyst Signature
- **Stable** YES Unstable

### Lab. Supervisor Signature
- **Comments** CATEGORY: A

### Actions to be Taken
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND83M070322  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 12 APR 2012

### Other Information
**M6 Propellant**

**Sample Data**
- **Solvent:** ACN
- **Sample #:** #1  
- **Weight:** 0.50 g  
- **Volume:** 100 ml

### Standards (ERG-006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>Time</td>
<td>Area 1</td>
<td>Area</td>
</tr>
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<td>50.0</td>
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<td>2,4-DNDPA</td>
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<td>4.803</td>
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<td>1530.7</td>
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</tr>
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**Avg. % Stabilizer for Lot:** 2.112

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

### Analyst
**Kisha Dickerson**

**Avg. Tot. Stabilizers:** 2.11%

### Analyst Signature
**Stable:** YES  
**Unstable:**

### Lab. Supervisor Signature

**Comments**
- **CATEGORY:** A

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82K070175  
**D533 / M6 propellant**

**Date of analysis:** 6 AUG 2010

**Other Information**
- **Sample Data**
  - Solvent: #1, 0.5000 g, 100 ml, ACN

<table>
<thead>
<tr>
<th>Standards (ERG-006)</th>
<th>Sample #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
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<td>4,4'-DNDA</td>
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</tr>
<tr>
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<td>50.0</td>
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<tr>
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<td>50.0</td>
</tr>
<tr>
<td>2,4' DNDA</td>
<td>50.0</td>
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<tr>
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<td>DPA</td>
<td>200.0</td>
</tr>
<tr>
<td>N-NitrosoDPA</td>
<td>75.0</td>
</tr>
</tbody>
</table>

**Avg. % Stabilizer for Lot**: 1.465

0.30% or more is Stability Code A  
0.20% -0.29% is Stability Code C  
Less than 0.20% is Stability Code D

**Analyst**: Mike Kile  
**Avg. Tot. Stabilizers**: 1.46 %

**Analyst Signature**

**Stable**: YES  
**Unstable**: Unstable

**Comments**: CATEGORY: A

**Lab. Supervisor Signature**

**Actions to be Taken**
# HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND82E070115  
**D533 / M6 propellant**

## Other Information

**Sample Data**  
- **Sample:** #1  
- **Weight:** 0.50 g  
- **Solvent:** 100 ml ACN

## Standards (ERG-006)

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<tr>
<th>Stabilizer</th>
<th>Conc. Ret ppm</th>
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<th>Intg.</th>
<th>Area 1</th>
<th>Conc. Intg.</th>
<th>Area %</th>
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<tbody>
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<td>50.0</td>
<td>3.438</td>
<td>959.4</td>
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<td>25268</td>
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<td>0.000</td>
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<td>4NDPA</td>
<td>50.0</td>
<td>9.163</td>
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### Avg. % Stabilizer for Lot

- **0.505**

0.30% or more is Stability Code A  
0.20% - 0.29% is Stability Code C  
Less than 0.20% is Stability Code D

## Analyst

**KISHA DICKERSON**

**Avg. Tot. Stabilizers:** 0.50%

**Analyst Signature**

**Stable:** YES  
**Unstable:**

**Comments**  
**CATEGORY:** A

**Lab. Supervisor Signature**

**Actions to be Taken**
## HPLC PROPELLANT STABILITY REPORT

**Lot Number:** IND81D070019  
**D533 / M6 propellant**

**Date of analysis:**  
**Date:** 29 MAY 2012

### Other Information
- **Sample Data**  
  - **Sample #1**  
  - **Solvent:**  
    - **0.50 g**  
    - **100 ml**  
    - **ACN**
- **M6 Propellant**

### Standards (ERG-006)

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<th>Intg. ppm</th>
<th>Time</th>
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### Average % Stabilizer for Lot

| Average % Stabilizer for Lot | 0.309 |

- 0.30% or more is Stability Code A
- 0.20% -0.29% is Stability Code C
- Less than 0.20% is Stability Code D

### Analyst

- **Name:** Takisha Dickerson  
- **Signature:**

### Analyst Signature

- **Avg. Tot. Stabilizers:** 0.31%
- **Stable:** YES
- **Unstable:**

### Comments

- **CATEGORY:** A
- **Actions to be Taken:**