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From: Delgado, Paige
Sent: Thursday, February 27, 2014 9:52 AM
To: Malone, George
Subject: Characteristic Wastes at Explo
Attachments: Paige Delgado.vcf; Attachment 5 MSDS for Nitrocellulose (2).pdf

<http://www.epa.gov/osw/hazard/wastetypes/characteristic.htm>

1. **Ignitability** - Ignitable wastes can create fires under certain conditions, are spontaneously combustible, or have a flash point less than 60 °C (140 °F). Examples include waste oils and used solvents. For more details, see [40 CFR §261.21](#). Test methods that may be used to determine ignitability include the [Pensky-Martens Closed-Cup Method for Determining Ignitability \(Method 1010A\) \(PDF\)](#) (1 pg, 19K), the [Setaflash Closed-Cup Method for Determining Ignitability \(Method 1020B\) \(PDF\)](#) (1 pg, 17K), and the [Ignitability of Solids \(Method 1030\) \(PDF\)](#) (13 pp, 116K).
2. **Corrosivity** - Corrosive wastes are acids or bases (pH less than or equal to 2, or greater than or equal to 12.5) that are capable of corroding metal containers, such as storage tanks, drums, and barrels. Battery acid is an example. For more details, see [40 CFR §261.22](#). The test method that may be used to determine corrosivity is the [Corrosivity Towards Steel \(Method 1110A\) \(PDF\)](#) (6 pp, 37K).
3. **Reactivity** - Reactive wastes are unstable under "normal" conditions. They can cause explosions, toxic fumes, gases, or vapors when heated, compressed, or mixed with water. Examples include lithium-sulfur batteries and explosives. For more details, see [40 CFR §261.23](#). There are currently no test methods available.
4. **Toxicity** - Toxic wastes are harmful or fatal when ingested or absorbed (e.g., containing mercury, lead, etc.). When toxic wastes are land disposed, contaminated liquid may leach from the waste and pollute ground water. Toxicity is defined through a laboratory procedure called the [Toxicity Characteristic Leaching Procedure \(TCLP\) \(Method 1311\) \(PDF\)](#) (35 pp, 288K). The TCLP helps identify wastes likely to leach concentrations of contaminants that may be harmful to human health or the environment. For more details, see [40 CFR §261.24](#).

According to the EPA regs, ignitability is defined as "Ignitable wastes can create fires under certain conditions, are spontaneously combustible, or have a flash point less than 60 °C (140 °F)" Nitrocellulose has a flash point of 12 C (53F). Nitrocellulose alone or in the mixture of M6 Propellant can auto-ignite or spontaneously combust, also defined under the characteristic of ignitability. See attached MSDS for Nitrocellulose.

The definition of Reactive is "unstable under "normal" conditions. They can cause explosions, toxic fumes, gases, or vapors when heated, compressed, or mixed with water." Also as far as analysis required to define a characteristically reactive substance, the regs state "There are currently no test methods available." M6 Propellant, Nitrocellulose in the M6 or M30 mixture or alone, Tritonal/Aluminum/TNT (specifically TNT), M30 Propellant, Composition H6 and its TNT constituent all cause explosions and are "unstable under 'normal conditions'" specifically M6, M30 and nitrocellulose which can auto-ignite or combust spontaneously. As listed in the Regs.

On another note, from a toxicity standpoint, GD OTS ran TCLP on the Tritonal/aluminum/TNT with a result exceeding 0.13 mg/l for 2,4-Dinitrotoluene classifying it as D030 and thus a hazardous waste. (This is in their work plan).

I didn't get through every constituent within each of our compounds on-site, but this is a start and should be sufficient. I'll keep on it.

Thanks.



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