

INTERNATIONAL PAPER

PHONE (256) 355-7610

DECATUR CONTAINER
151 IPSCO STREET
DECATUR, AL 35601

FAX (256) 552-1715

January 14, 2009

Mr. Michael Horn
U.S. Environmental Protection Agency
Clean Water Enforcement Branch
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

RE: Information Request – Section 308 of the Clean Water Act
Discharge of Perfluorinated Compounds

Dear Mr. Horn:

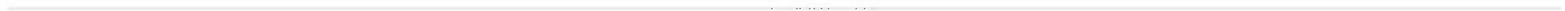
International Paper plant, located in Decatur, AL, received your correspondence regarding the above entitled letter on December 17, 2008. This letter is in response to the information request regarding Section 308 of the Clean Water Act (CWA), 33 U.S.C. 1318. The International Paper facility, which began operation in 1969, has no history of ever using or disposing of PFC's as defined in the informational request. Thank you for the opportunity to respond to the request and if you have any questions or need additional information, please call Nancy Mitchell, EHS Manager at (256) 552-1723. The number of responses is in the numbered order of the question posed in the 308 request.

1. The Decatur, Alabama location has manufactured corrugated boxes each year beginning with calendar year 1996 to the present. 65 -70% of our corrugated products have been approved by the FDA for direct food contact.
2. The Standard Industrial Classification code for our business is 2653. The North American Industry Classification System code is 322211. These codes are the codes for each calendar year beginning with calendar year 1996 to the present.



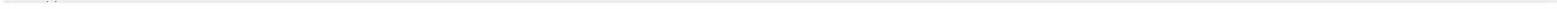
3. The Decatur, Alabama location has not used any raw and finished materials that contained PFC's in our Company's operations to manufacture products or provide services for each calendar year beginning with calendar year 1996 to the present.
4. A copy of the Material Data Sheets for the raw materials used in our Company's operations to manufacture products or provide services at our Decatur, Alabama location for each calendar year beginning with calendar year 1996 to the present are enclosed. Our raw materials include paraffin wax , water based inks with low VOC's, glue and corn starch, including adhesives and borax to help with the interaction process to adhere the paper together. These MSDS sheets are recent and representative of what we use at the Decatur facility.
5. Our company has not ever used PFCs in its operations to manufacture products or provide services at its Decatur, Alabama location.
6. Our company has not ever use telomers or fluoropolymers in its operations to manufacture products or provide services at its Decatur, Alabama location.
7. & 8. A narrative description, disposal methods and disposal location of the byproducts, waste streams and emissions are below. On the left is a narrative description and on the right is the disposal method and location.

Waste Description	Disposal	Location
Air	Minor source and no Air Permit is required.	N/A
Solid Waste – Lamps, Batteries, Solvent, Used Oil,	Recycled	Safety Kleen approved facility.
Packaging waste – trim, out of spec boxes.	Recycled	Rincon resells to mills.
Solid Waste – machine parts, strapping, air bags, scrap dies, broken pallets	Landfill	Waste Management removes.
Water	Wastewater is collected from our process into a holding tank located inside our plant. Solids are allowed to settle and the liquid goes to the drain.	The solid waste is disposed of by Rapid Rooter or to the landfill.



9. There is no pollution abatement equipment and/or pretreatment process that have been applied to the byproducts and waste streams from our Company's operations to manufacture products or provide services at its Decatur, Alabama location prior to their discharge into the Decatur Utilities sewer system for each calendar year beginning with calendar year 1996 to the present. See response to question 11.
10. There was no analytical data or monitoring results indicating the presence of PFCs or fluoride in the byproducts and waste streams from the Company's operations to manufacture products or provide services at its Decatur, Alabama location that were discharged into the Decatur Utilities sewer system for each calendar year beginning with calendar year 1996 to the present.
11. There is no permit, contract or agreement that the Company may have or have had relating to the discharge of byproducts and waste streams into the Decatur Utilities sewer system for each calendar year beginning with calendar year 1996 to the present. The International Paper, Decatur facility has been placed in Category 1 of the Decatur Utilities ordinance no. 2008-3954, Section 23-135.13, 2. that does not require a permit. No applications are required or have been made. See attachment of the Decatur City Ordinance.
12. The Decatur plant has not performed any monitoring or sampling of ambient air, surface water, groundwater or soil for PFCs at and around the Company's Decatur, Alabama location.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



Sincerely,

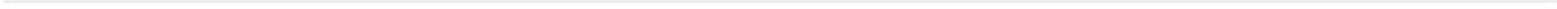
A handwritten signature in black ink, appearing to read "Houston Hutto". The signature is written in a cursive style with a large initial "H".

Houston Hutto
Plant Manager

NM/nlm

cc: Nancy Mitchell, Environment, Health & Safety Manager

Enclosure:





IP-455 Hot Melt Wax

532

Material Safety Data Sheet

CITGO Petroleum Corporation
P.O. Box 3758
Tulsa, OK 74102-3758

MSDS No. 653455353

Revision Date 08/19/2002

IMPORTANT: Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

Emergency Overview

Physical State Solid. (at ambient temperatures.)
Color Amber. Odor Faint Odor

WARNING!

Hot Wax can cause burns to eyes and skin.
When handling hot wax, use heat-protective gloves and other PPE to protect against thermal burns.
Spills may create a slipping hazard.

Hazard Rankings

	HMIS	NFPA
Health Hazard	1	1
Fire Hazard	1	1
Reactivity	0	0

* = Chronic Health Hazard

Protective Equipment

Minimum Recommended
See Section 8 for Details
This recommendation reflects
minimum PPE when product is at
elevated temperatures.



SECTION 1: IDENTIFICATION

Trade Name IP-455 Hot Melt Wax

Product Number 653455353

CAS Number Mixture.

Product Family Paraffin Wax

Synonyms Hot Melt Wax;
CITGO SAP Product Code No.: 653455353

Technical Contact (800) 248-4684
or (337) 708-7350

Medical Emergency (918) 495-4700

CHEMTREC Emergency (800) 424-9300
(United States Only)

SECTION 2: COMPOSITION

Component Name(s)

- 1) Paraffin wax
- 2) Microcrystalline wax, clay treated
- 3) Ethylene vinyl acetate copolymer
- 4) Polyethylene
- 5) Proprietary Ingredients

CAS Registry No.

8002-74-2
64742-42-3
Proprietary
9002-88-4
Proprietary Mixture

Concentration (%)

40 - 60
20 - 40
5 - 20
1 - 10
1 - 10

SECTION 3: HAZARDS IDENTIFICATION

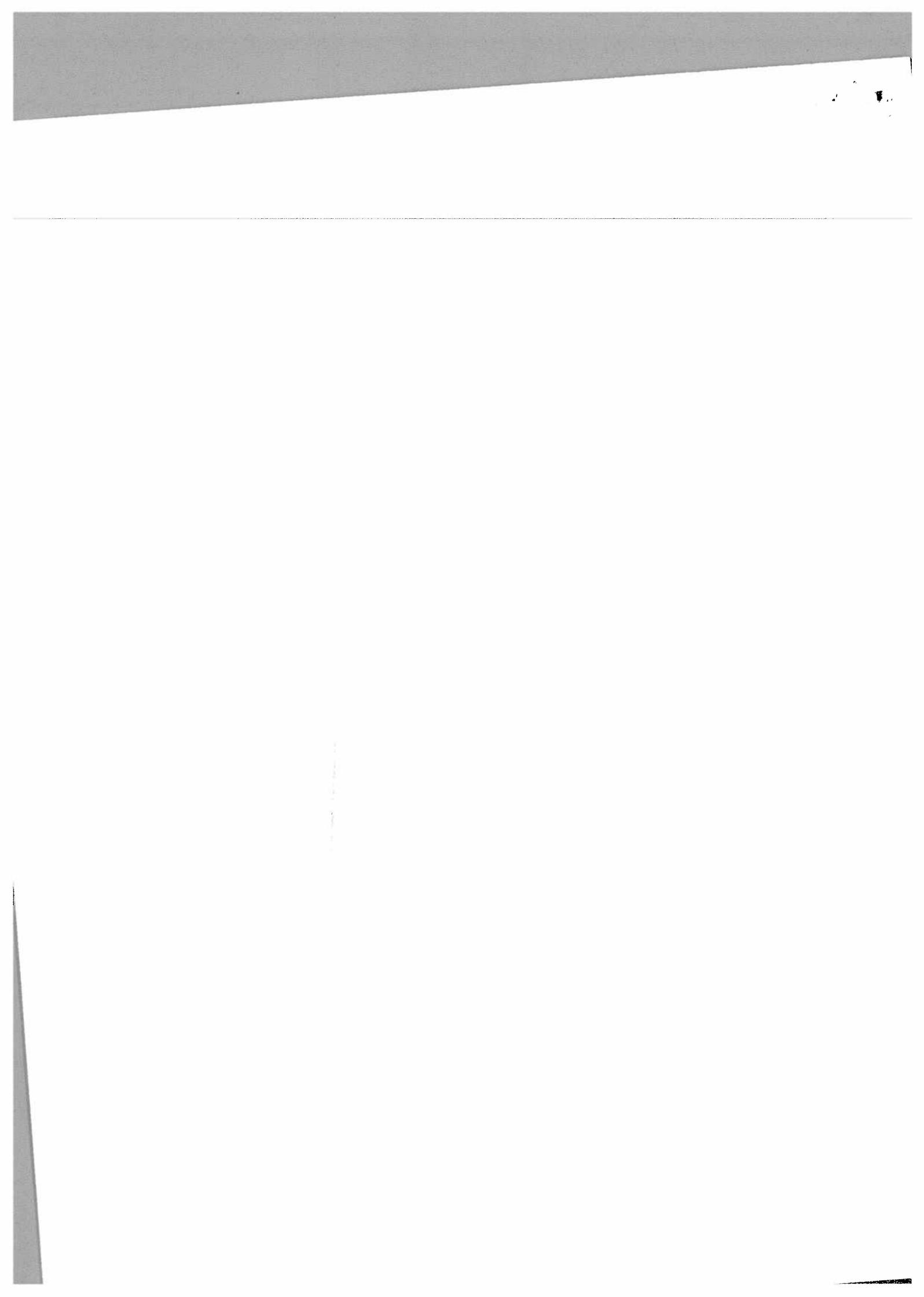
Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact. Inhalation.

Signs and Symptoms of Acute Exposure

MSDS No. 653455353

Revision Date 08/19/2002



IP-455 Hot Melt Wax

- Inhalation** At elevated temperatures dense fumes may develop which can cause respiratory tract irritation and other breathing disorders.
- Eye Contact** Dust may cause mechanical eye irritation. Contact with hot product will cause burns to the eyes.
- Skin Contact** Skin contact with hot material may result in severe burns.
- Ingestion** Contact with hot material may cause thermal burns. If swallowed, no significant adverse health effects are anticipated. This material can cause a laxative effect. If swallowed in large quantities, this material can obstruct the intestine.
- Chronic Health Effects Summary** Repeated or prolonged over exposure can cause mild skin irritation or inflammation. Poor personal hygiene can result in wax plugging skin follicles and producing pus-forming skin infections known as "wax-boils."
- Conditions Aggravated by Exposure** Medical conditions aggravated by exposure to this material may include skin disorders and chronic respiratory diseases.
- Target Organs** This material may cause damage to the following organs: skin.
Contains material which may cause damage to the following organs: upper respiratory tract.
- Carcinogenic Potential** This product does not contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

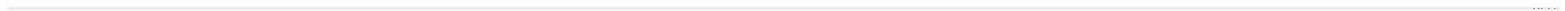
OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification			OSHA Physical Hazard Classification						
Irritant	<input type="checkbox"/>	Toxic	<input type="checkbox"/>	Combustible	<input type="checkbox"/>	Explosive	<input type="checkbox"/>	Pyrophoric	<input type="checkbox"/>
Sensitizer	<input type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input type="checkbox"/>	Oxidizer	<input type="checkbox"/>	Water-reactive	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>	Organic Peroxide	<input type="checkbox"/>	Unstable	<input type="checkbox"/>

SECTION 4: FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

- Inhalation** Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. Keep the affected individual warm and at rest.
- Eye Contact** If hot product enters the eyes, irrigate with large amounts of room-temperature water. Seek medical attention immediately. If product at ambient temperatures enters eyes, check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.
- Skin Contact** If burned by hot material, cool skin by quenching with large amounts of cool water. Do not remove material from the skin. Seek medical attention immediately. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods.
- Ingestion** Do not induce vomiting unless directed to by a physician. Rinse out mouth with water. Never give anything by mouth to a person who is not fully conscious. Allow small quantities to pass through the digestive system. If large amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.
- Notes to Physician** Check for possible bowel obstruction with ingestion of large quantities of material. Monitor pulmonary functions with inhalation of fumes or degradation products. Treat symptomatically.



IP-455 Hot Melt Wax

SECTION 5: FIRE FIGHTING MEASURES

NFPA Flammability Classification	NFPA Class-III B combustible material. Slightly combustible!		
Flash Point Method	OPEN CUP: >150°C (>302°F) (Estimated).		
Lower Flammable Limit	No data.	Upper Flammable Limit	No data.
Autoignition Temperature	Not available.		
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons, aldehydes and other products of incomplete combustion.		
Special Properties	Fight the fire from a safe distance in a protected location. Open any masses with a water stream to prevent reignition due to smoldering. Cool surface with water fog. Molten material can form flaming droplets if ignited. Water or foam can cause frothing. Use of water on product above 100° C (212° F) can cause product to expand with explosive force. Do not allow liquid runoff to enter sewers or public waters.		
Extinguishing Media	Use dry chemical, foam, Carbon Dioxide or water fog.		
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.		

SECTION 6: ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Contain spill and evacuate non-essential personnel. On hard surfaces, a spill may create a slipping hazard. In an urban area, cleanup spill as soon as possible; in natural environments, seek cleanup advice from environmental specialists. Equip cleanup crews with proper protective equipment and advise of pertinent hazards. Cleanup by shoveling solids and vacuuming dust and/or fines and place collected material in closed containers. Do not dry sweep or blow dust around with compressed air. Residue may be removed with water if permitted by regulations. Wetting down may produce a very slippery surface. Comply with all laws and regulations.

SECTION 7: HANDLING AND STORAGE

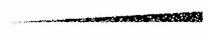
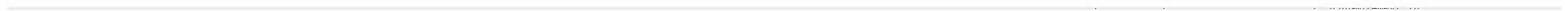
Handling	Use normal precautions when handling hot, molten liquid solutions. Do not breathe fumes or vapor from heated material. Do not allow hot material to contact skin. With the product at ambient temperatures, avoid creating and breathing dust. Wash thoroughly after handling.
Storage	Store only in accordance with NFPA standards. This material can catch fire if overheated. DO NOT heat this material above its flash point. Keep away from flame and open electrical coils.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.
Personal Protective Equipment	Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required. This recommendation reflects minimum PPE when product is at elevated temperatures.



10/10/10



IP-455 Hot Melt Wax



- Eye Protection** Use a full-face shield and chemical safety goggles if handling heated material. With product at ambient temperatures, safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Keep a suitable eye wash station immediately available to the work area.
- Hand Protection** When handling product at elevated temperatures, use long-cuffed leather or heat-resistant gloves over chemical-resistant gloves. With product at ambient temperatures, use disposable nitrile, neoprene or butyl rubber gloves with repeated or prolonged use.
- Body Protection** Prevent skin contact when handling heated material. Use insulated, heat-resistant clothing such as a chemical resistant apron or slicker suit. Use a full-body heat-resistant or internally cooled suit when work conditions dictate.
- Respiratory Protection** Vaporization is not expected at ambient temperatures. Therefore, the need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).
- General Comments** Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners.
- Occupational Exposure Guidelines**

Substance

1) Paraffin wax

Applicable Workplace Exposure Levels

ACGIH (United States).

TWA: 2 mg/m³

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid. (at ambient temperatures.)	Color Amber.	Odor	Faint Odor
Specific Gravity	0.77 (Water = 1)	pH Not Applicable.	Vapor Density	>1 (Air = 1)
Boiling Point/Range	Not available.		Melting/Freezing Point	Not available.
Vapor Pressure	<0.01 kPa (<0.1 mmHg) (at 20°C)		Viscosity (cSt @ 40°C)	Not available
Solubility in Water	Insoluble in cold water.		Volatile Characteristics	Negligible volatility
Additional Properties	Density = 6.41 lbs/gal.			

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability	Stable.	Hazardous Polymerization	Not expected to occur.
Conditions to Avoid	Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions.		
Materials Incompatibility	Strong oxidizers.		
Hazardous Decomposition Products	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.		



IP-455 Hot Melt Wax

SECTION 11: TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data

Paraffin wax:

ORAL (LD50): Acute: >5000 mg/kg [Rat].
DERMAL (LD50): Acute: >5000 mg/kg [Rabbit].

Paraffin wax:

Refined paraffin waxes are generally considered to have a low order of toxicity. In clinical acute and repeated dose studies, paraffinic and microcrystalline waxes exhibited slight erythema. Further, these clinical studies did not find any skin sensitization. In some case studies, autoimmune conditions have been reported after injection or implantation of paraffin waxes in humans. Typical symptoms include fatigue, weakness, joint or muscle pain, dry mouth and eyes, rashes hair loss, lymph gland atrophy, formation of autoantibodies and progressive systemic sclerosis.

Ethylene vinyl acetate copolymer:

Overexposure to fumes can cause respiratory tract irritation.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecological effects testing has not been conducted on this material. Discharges are expected to cause only localized and non-persistent environmental damage.

Environmental Fate

Petroleum-based (mineral) waxes normally will float on water. In stagnant or slow-flowing waterways, a wax layer can reduce the atmospheric oxygen exchange with the water system. If the wax layer is not removed, oxygen depletion can result in loss of marine life.

SECTION 13: DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a RCRA "hazardous waste" at the time of disposal. Transportation, treatment, storage and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact the RCRA/Superfund Hotline at (800) 424-9346 or your regional US EPA office for guidance concerning case specific disposal issues.

SECTION 14: TRANSPORT INFORMATION

DOT Status

May be a U.S. Department of Transportation regulated material under certain conditions. **This material is regulated by the US DOT only when it is offered for shipment at temperatures above 212° F (100° C).** The shipping description listed below applies only to shipments of this product that are regulated by the US Department of Transportation.

Proper Shipping Name

Elevated Temperature Liquid, n.o.s. (Waxes)

Hazard Class

9

Packing Group(s) III

UN/NA ID

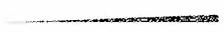
UN 3257

Reportable Quantity

A Reportable Quantity (RQ) has not been established for this material.

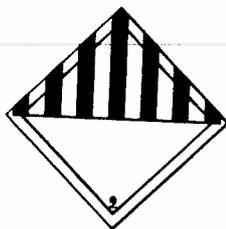


11



IP-455 Hot Melt Wax

Placards



Emergency Response Guide No.	171
HAZMAT STCC No.	Not available
MARPOL III Status	Not a DOT "Marine Pollutant" per 49 CFR 171.8.

SECTION 15: REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: No SARA 311/312 hazard categories identified.
SARA 313	This product contains the following components in concentrations above de minimis levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill.
CWA	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
California Proposition 65	This product is not known to contain the any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.
New Jersey Right-to-Know Label	For New Jersey R-T-K labeling requirements, refer to components listed in Section 2.
Additional Regulatory Remarks	No additional regulatory remarks.

SECTION 16: OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number	1.0
Revision Date	08/19/2002
Print Date	Printed on 08/19/2002.

ABBREVIATIONS

AP: Approximately	EQ: Equal	>: Greater Than	<: Less Than	NA: Not Applicable	ND: No Data	NE: Not Established
ACGIH: American Conference of Governmental Industrial Hygienists			AIHA: American Industrial Hygiene Association			

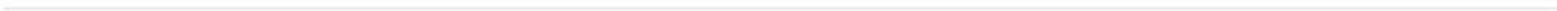
MSDS No. 653455353

Revision Date 08/19/2002

Continued on Next Page



11



IP-455 Hot Melt Wax

IARC: International Agency for Research on Cancer

NIOSH: National Institute of Occupational Safety and Health

NPCA: National Paint and Coating Manufacturers Association

NFPA: National Fire Protection Association

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

HMIS: Hazardous Materials Information System

EPA: US Environmental Protection Agency

DISCLAIMER OF LIABILITY

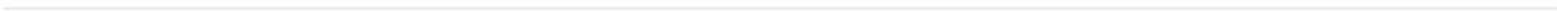
THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

***** END OF MSDS *****



11/11/11





CITGO Petroleum Corporation
P.O. Box 3758
Tulsa, OK 74102-3758

IP-130 Wax

Material Safety Data Sheet

514

MSDS No. 853813353
Revision Date 08/20/2002

IMPORTANT: Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

Emergency Overview

Physical State Solid. (at ambient temperatures.)
Color White to light amber Odor Mild.

WARNING!

Hot Wax can cause burns to eyes and skin.
When handling hot wax, use heat-protective gloves and other PPE to protect against thermal burns.
Spills may create a slipping hazard.

Hazard Rankings

	HMIS	NFPA
Health Hazard	1	0
Fire Hazard	1	1
Reactivity	0	0

* = Chronic Health Hazard

Protective Equipment

Minimum Recommended
See Section 8 for Details
This recommendation reflects
minimum PPE when product is at
elevated temperatures.



SECTION 1: IDENTIFICATION

Trade Name IP-130 Wax
Product Number 853813353
CAS Number Mixture.
Product Family Paraffin Wax
Synonyms Paraffin Wax,
CITGO SAP Product Code No.: 653813353

Technical Contact (800) 248-4684
or (337) 708-7350
Medical Emergency (918) 495-4700
CHEMTREC Emergency (United States Only) (800) 424-9300

SECTION 2: COMPOSITION

Component Name(s)
1) Paraffin wax
2) Proprietary Ingredients

CAS Registry No. 8002-74-2
Proprietary Mixture
Concentration (%)
99 - 100
0 - 1

SECTION 3: HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.
Major Route(s) of Entry Skin contact. Inhalation.

Signs and Symptoms of Acute Exposure

Inhalation At elevated temperatures dense fumes may develop which can cause respiratory tract irritation and other breathing disorders
Eye Contact Dust may cause mechanical eye irritation. Contact with hot product will cause burns to the eyes.

MSDS No. 853813353

Revision Date 08/20/2002

Continued on Next Page

11

IP-130 Wax

- Skin Contact** Skin contact with hot material may result in severe burns.
- Ingestion** Contact with hot material may cause thermal burns. If swallowed, no significant adverse health effects are anticipated. This material can cause a laxative effect. If swallowed in large quantities, this material can obstruct the intestine.
- Chronic Health Effects Summary** Repeated or prolonged over exposure can cause mild skin irritation or inflammation. Poor personal hygiene can result in wax plugging skin follicles and producing pus-forming skin infections known as "wax-boils."
- Conditions Aggravated by Exposure** Medical conditions aggravated by exposure to this material may include skin disorders and chronic respiratory diseases.
- Target Organs** This material may cause damage to the following organs: upper respiratory tract, skin.
- Carcinogenic Potential** This product does not contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification		OSHA Physical Hazard Classification			
Irritant	<input type="checkbox"/>	Toxic	<input type="checkbox"/>	Combustible	<input type="checkbox"/>
Sensitizer	<input type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>
				Explosive	<input type="checkbox"/>
				Oxidizer	<input type="checkbox"/>
				Organic Peroxide	<input type="checkbox"/>
				Pyrophoric	<input type="checkbox"/>
				Water-reactive	<input type="checkbox"/>
				Unstable	<input type="checkbox"/>

SECTION 4: FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

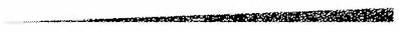
- Inhalation** Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. Keep the affected individual warm and at rest.
- Eye Contact** If hot product enters the eyes, irrigate with large amounts of room-temperature water. Seek medical attention immediately. If product at ambient temperatures enters eyes, check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.
- Skin Contact** If burned by hot material, cool skin by quenching with large amounts of cool water. Do not remove material from the skin. Seek medical attention immediately. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods.
- Ingestion** Do not induce vomiting unless directed to by a physician. Rinse out mouth with water. Never give anything by mouth to a person who is not fully conscious. Allow small quantities to pass through the digestive system. If large amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.
- Notes to Physician** Check for possible bowel obstruction with ingestion of large quantities of material. Monitor pulmonary functions with inhalation of fumes or degradation products. Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

- NFPA Flammability Classification** NFPA Class-IIIB combustible material. Slightly combustible!
- Flash Point Method** OPEN CUP: 191°C (375°F) (Cleveland)
- Lower Flammable Limit** No data. **Upper Flammable Limit** No data.
- Autoignition Temperature** Not available.



11



IP-130 Wax

Hazardous Combustion Products

Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons, aldehydes and other products of incomplete combustion.

Special Properties

Fight the fire from a safe distance in a protected location. Open any masses with a water stream to prevent reignition due to smoldering. Cool surface with water fog. Molten material can form flaming droplets if ignited. Water or foam can cause frothing. Use of water on product above 100° C (212° F) can cause product to expand with explosive force. Do not allow liquid runoff to enter sewers or public waters.

Extinguishing Media

Use dry chemical, foam, Carbon Dioxide or water fog

Protection of Fire Fighters

Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Contain spill and evacuate non-essential personnel. On hard surfaces, a spill may create a slipping hazard. In an urban area, cleanup spill as soon as possible; in natural environments, seek cleanup advice from environmental specialists. Equip cleanup crews with proper protective equipment and advise of pertinent hazards. Cleanup by shoveling solids and vacuuming dust and/or fines and place collected material in closed containers. Do not dry sweep or blow dust around with compressed air. Residue may be removed with water if permitted by regulations. Wetting down may produce a very slippery surface. Comply with all laws and regulations.

SECTION 7: HANDLING AND STORAGE

Handling

Use normal precautions when handling hot, molten liquid solutions. Do not breathe fumes or vapor from heated material. Do not allow hot material to contact skin. With the product at ambient temperatures, avoid creating and breathing dust. Wash thoroughly after handling.

Storage

Store only in accordance with NFPA standards. This material can catch fire if overheated. DO NOT heat this material above its flash point. Keep away from flame and open electrical coils.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.

Personal Protective Equipment

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.

This recommendation reflects minimum PPE when product is at elevated temperatures.



Eye Protection

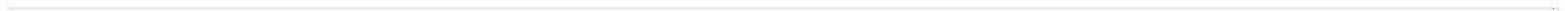
Use a full-face shield and chemical safety goggles if handling heated material. With product at ambient temperatures, safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Keep a suitable eye wash station immediately available to the work area.

Hand Protection

When handling product at elevated temperatures, use long-cuffed leather or heat-resistant gloves over chemical-resistant gloves. With product at ambient temperatures, use disposable nitrile, neoprene or butyl rubber gloves with repeated or prolonged use.



11



IP-130 Wax

- Body Protection** Prevent skin contact when handling heated material. Use insulated, heat-resistant clothing such as a chemical resistant apron or slicker suit. Use a full-body heat-resistant or internally cooled suit when work conditions dictate.
- Respiratory Protection** Vaporization is not expected at ambient temperatures. Therefore, the need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).
- General Comments** Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested as minimum control guidelines.
- Occupational Exposure Guidelines**

Substance

1) Paraffin wax

Applicable Workplace Exposure Levels
ACGIH (United States).
TWA 2 mg/m³

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid. (at ambient temperatures.)	Color	White to light amber	Odor	Mild.
Specific Gravity	0.76 (Water = 1)	pH	Not Applicable.	Vapor Density	>1 (Air = 1)
Boiling Point/Range	Not available.	Melting/Freezing Point			53°C (127°F)
Vapor Pressure	<0.01 kPa (<0.1 mmHg) (at 20°C)	Viscosity (cSt @ 40°C)			Not available
Solubility in Water	Insoluble in cold water.	Volatile Characteristics			Negligible volatility
Additional Properties	Density = 6.36 lbs/gal.				

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability	Stable.	Hazardous Polymerization	Not expected to occur.
Conditions to Avoid	Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions.		
Materials Incompatibility	Strong oxidizers.		
Hazardous Decomposition Products	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.		

SECTION 11: TOXICOLOGICAL INFORMATION

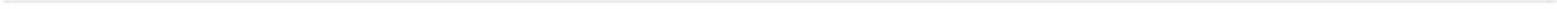
For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data

Paraffin wax:	
ORAL (LD50):	Acute: >5000 mg/kg [Rat].
DERMAL (LD50):	Acute: >5000 mg/kg [Rabbit].



11



IP-130 Wax

Paraffin wax:

Refined paraffin waxes are generally considered to have a low order of toxicity. In clinical acute and repeated dose studies, paraffinic and microcrystalline waxes exhibited slight erythema. Further, these clinical studies did not find any skin sensitization. In some case studies, autoimmune conditions have been reported after injection or implantation of paraffin waxes in humans. Typical symptoms include fatigue, weakness, joint or muscle pain, dry mouth and eyes, rashes hair loss, lymph gland atrophy, formation of autoantibodies and progressive systemic sclerosis.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Ecological effects testing has not been conducted on this material. Discharges are expected to cause only localized and non-persistent environmental damage.

Environmental Fate

Petroleum-based (mineral) waxes normally will float on water. In stagnant or slow-flowing waterways, a wax layer can reduce the atmospheric oxygen exchange with the water system. If the wax layer is not removed, oxygen depletion can result in loss of marine life.

SECTION 13: DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a RCRA "hazardous waste" at the time of disposal. Transportation, treatment, storage and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact the RCRA/Superfund Hotline at (800) 424-9348 or your regional US EPA office for guidance concerning case specific disposal issues.

SECTION 14: TRANSPORT INFORMATION

DOT Status

May be a U.S. Department of Transportation regulated material under certain conditions. This material is regulated by the US DOT only when it is offered for shipment at temperatures above 212° F (100° C). The shipping description listed below applies only to shipments of this product that are regulated by the US Department of Transportation.

Proper Shipping Name

Elevated Temperature Material, n.o.s. (Waxes)

Hazard Class

9

Packing Group(s)

III

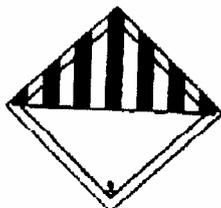
UNNA ID

UN 3257

Reportable Quantity

A Reportable Quantity (RQ) has not been established for this material.

Placards



Emergency Response Guide No.

171

HAZMAT STCC No.

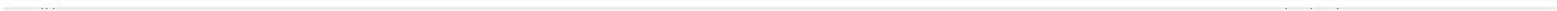
Not applicable.

MARPOL III Status

Not a DOT "Marine Pollutant" per 49 CFR 171.8.



11



SECTION 15: REGULATORY INFORMATION

TSCA Inventory

This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.

SARA 302/304

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.

SARA 311/312

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories:
No SARA 311/312 hazard categories identified.

SARA 313

This product contains the following components in concentrations above de minimis levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill.

CWA

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

California Proposition 65

This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.

New Jersey Right-to-Know Label

For New Jersey R-T-K labeling requirements, refer to components listed in Section 2.

Additional Regulatory Remarks

No additional regulatory remarks.

SECTION 16: OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number	1.0
Revision Date	08/20/2002
Print Date	Printed on 08/20/2002.

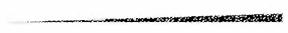
ABBREVIATIONS

AP: Approximately	EQ: Equal	>: Greater Than	<: Less Than	NA: Not Applicable	ND: No Data	NE: Not Established
ACGIH: American Conference of Governmental Industrial Hygienists				AIHA: American Industrial Hygiene Association		
IARC: International Agency for Research on Cancer				NTP: National Toxicology Program		
NIOSH: National Institute of Occupational Safety and Health				OSHA: Occupational Safety and Health Administration		
NPCA: National Paint and Coating Manufacturers Association				HMIS: Hazardous Materials Information System		
NFPA: National Fire Protection Association				EPA: US Environmental Protection Agency		

DISCLAIMER OF LIABILITY



11



IP-130 Wax

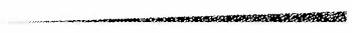
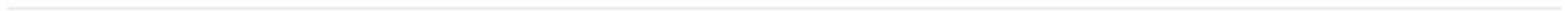
THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

***** END OF MSDS *****



11



120



MATERIAL SAFETY DATA

Product Name: Sodium Hydroxide Solution (50%)
 Revision Date: March 10, 2004
 Revision No.: 3

OCEAN NETWORK EMERGENCY PHONE 1-888-2891-911

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD. (REFER TO THE OSHA CLASSIFICATION IN SEC.I.) THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE. THE EXPOSURE TO THE COMMUNITY, IF ANY, IS QUITE DIFFERENT.

I - PRODUCT IDENTIFICATION

Product Name:	Sodium Hydroxide Solution (50%)
Synonyms:	Caustic Soda, Caustic, Alkali, Lye, Caustic Lye
Chemical Family:	Alkali, Base
Formula:	NaOH
Use Description:	Neutralizing agent, sodium source
Hazard Classification:	Corrosive, eye and skin hazard, lung toxin
Product Code:	105016, 105017, 105018, 105187, 105188, 105365
File No.:	MSDS0200M

II - COMPONENT DATA

This Product Composition information presented here describes the major components and their concentrations found in this product and other information as required by OSHA. This is not, and should not be interpreted, or used as, a Product Specification or a detailed chemical analysis.

Established Federal OSHA PEL is provided. OSHA Agreement State PEL may be different.

Product Composition

CAS or Chemical Name:	Sodium Hydroxide				
CAS Number:	1310-73-2				
Percentage Range:	45-50%				
Hazardous Per 29 CFR 1910.1200:	Yes				
Exposure Standards:	OSHA (PEL) *		ACGIH (TLV)		
		ppm	mg/M ³	ppm	mg/M ³
	TWA:	N/A	2	N/A	None
	CEILING:	N/A	None	N/A	2
	STEL:	N/A	None	N/A	None

* Federal OSHA PEL. An Agreement State OSHA PEL may be different.



11





**MATERIAL
SAFETY DATA**

Product Name: Sodium Hydroxide Solution (50%)
 Revision Date: March 10, 2004
 Revision No.: 3

CAS or Chemical Name:	Water
CAS Number:	7732-18-5
Percentage Range:	45-55%
Hazardous Per 29 CFR 1910.1200:	No
Exposure Standards:	None established.

III - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. AVOID BREATHING VAPOR OR MIST.

STORAGE CONDITIONS:

DO NOT STORE AT TEMPERATURES ABOVE: 130° C (266° F)

PRODUCT STABILITY AND COMPATIBILITY:

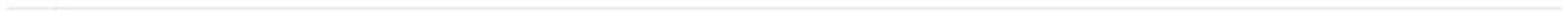
SHELF LIFE LIMITATIONS:	Indefinite if in closed container.
INCOMPATIBLE MATERIALS FOR PACKAGING:	Aluminum, zinc, tin, wood, paper
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT:	Acids, nitrogen containing organics, phosphorous, explosives, organic peroxides, aluminum, zinc, tin, halogenated hydrocarbons

IV - PHYSICAL DATA

Appearance:	Clear, viscous liquid
Freezing Point:	10-12° C (50-54° F)
Boiling Point:	130-140° C (266-284° F)
Decomposition Temperature:	None
Specific Gravity:	1.482-1.53
Bulk Density:	Not Applicable
pH @ 25° C:	13 (0.5% Solution)
Vapor Pressure @ 25° C:	Approximately equal to water
Solubility in Water:	Miscible
Volatiles, Percent by Volume:	45-55
Evaporation Rate:	No Data
Vapor Density:	No Data
Molecular Weight:	40.01 (Active agent)
Odor:	None
Coefficient of Oil/Water Distribution:	No Data



..





**MATERIAL
SAFETY DATA**

Product Name: Sodium Hydroxide Solution (50%)
 Revision Date: March 10, 2004
 Revision No.: 3

V - PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Personal Protection for Routine Use of Product:

Respiratory Protection:	If mists, or aerosols are generated and are not controlled below the TLV with ventilation wear a NIOSH approved dust/mist respirator.
Ventilation:	Use Local exhaust ventilation to maintain levels to below the TLV.
Skin and Eye Protection:	Wear gloves, boots, face shield with chemical goggles, apron or impermeable suit to avoid skin and eye contact.
Other:	Emergency eye wash and safety showers must be made available in the immediate work area.

Equipment Specifications (When Applicable):

Respirator Type:	NIOSH N95 filter respirator, or better.	
Protective Clothing Type: (This includes: gloves, boots, apron, protective suit.)	GLOVE TYPE:	Neoprene
	BOOT TYPE:	Neoprene
	APRON TYPE:	Neoprene
	PROTECTIVE SUIT:	Neoprene

VI - FIRE AND EXPLOSION HAZARD INFORMATION

Flammability Data:

Explosive:	
Flammable:	No
Combustible:	No
Pyrophoric:	No
Flash Point:	Not Applicable
Autoignition Temperature:	Not Applicable
Flammable Limits at Normal Atmospheric Temperature and Pressure (Percent Volume in Air):	Not Applicable

NFPA Ratings:

Health:	3
Flammability:	0
Reactivity:	1

HMIS Ratings:

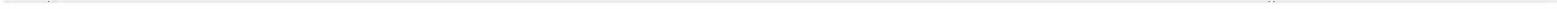
Health:	3
Flammability:	0
Reactivity:	1

Extinguishing Media:

Not Applicable - Choose extinguishing media suitable for surrounding materials.



11





MATERIAL SAFETY DATA

Product Name: Sodium Hydroxide Solution (50%)
 Revision Date: March 10, 2004
 Revision No.: 3

Fire Fighting Techniques and Comments:

Use water to cool containers exposed to fire. Contact with reactive metals, e.g., aluminum may result in the generation of flammable hydrogen gas. See Section XI for protective equipment for fire fighting. Sodium Hydroxide may react with water. (See Section 7). On small fires, use dry chemical, carbon dioxide, water spray, or foam. On large fires, use water-flooding quantities as a fog.

VII - REACTIVITY INFORMATION

Conditions Under Which This Product May Be Unstable:

Temperatures Above:	None
Mechanical Shock or Impact:	No
Electrical (Static) Discharge:	No
Other:	Contact with carbohydrates, aluminum, zinc, and tin.
Hazardous Polymerization:	Will not occur
Incompatible Materials:	Acids, nitrogen containing organics, explosives, carbohydrates, phosphorous, organic peroxides, halogenated hydrocarbons
Hazardous Decomposition:	Contact with carbohydrates can produce carbon monoxide. Contact with aluminum, zinc, or tin can produce hydrogen gas.

Summary of Reactivity:

Explosive:	No
Oxidizer:	No
Pyrophoric:	No
Organic Peroxide:	No
Water Reactive:	No
Corrosive:	Yes

VIII - FIRST AID

Eyes

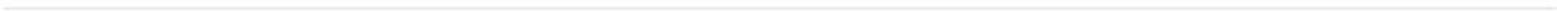
Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention at once.

Skin

Immediately flush with water for at least 15 minutes. Seek medical attention. If clothing, shoes and/or jewelry come in contact with the product, they should be removed immediately and laundered before re-use.

Ingestion

Immediately drink large quantities of water. DO NOT induce vomiting. Seek medical attention at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.





MATERIAL SAFETY DATA

Product Name: Sodium Hydroxide Solution (50%)
Revision Date: March 10, 2004
Revision No.: 3

Inhalation

If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Seek medical attention. In the event that an individual inhales enough vapors to lose consciousness, person should be moved to fresh air at once and seek medical attention immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

IX - TOXICOLOGY AND HEALTH INFORMATION

Routes of Absorption

Inhalation, skin and eye contact, ingestion

Warning Statements and Warning Properties

HARMFUL IF SWALLOWED. CAUSES SKIN, EYE, DIGESTIVE TRACT AND RESPIRATORY TRACT BURNS. CAN CAUSE LUNG DAMAGE.

Human Threshold Response Data

Odor Threshold:	No data.
Irritation Threshold:	No data.
Immediately Dangerous to Life or Health:	10 mg/M ³ .

Signs, Symptoms and Effects of Exposure

Inhalation

Acute:	Inhalation of this material is irritating to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract, which can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage.
Chronic:	Chronic (repeated) inhalation exposure may cause impairment of lung function and permanent lung damage.

Skin

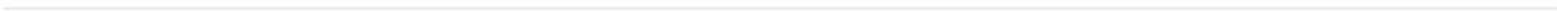
Acute:	Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause permanent damage.
Chronic:	Effects from chronic skin exposure would be similar to those from single exposure except for effects secondary to tissue destruction.

Eye

Severe irritation and/or burns can occur following eye exposure. Direct contact may cause impairment of vision and corneal damage.



11





**MATERIAL
SAFETY DATA**

Product Name: Sodium Hydroxide Solution (50%)
Revision Date: March 10, 2004
Revision No.: 3

Ingestion

Acute:	Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, and bleeding and/or tissue ulceration. Ingestion causes severe damage to the gastrointestinal tract with the potential to cause perforation.
Chronic:	There are no known or reported effects from chronic exposure. Chronic ingestion of significant amounts of this product is unlikely because of its acute corrosive action.

Medical Conditions Aggravated by Exposure

Asthma, respiratory and cardiovascular disease

Interactions with Other Chemicals Which Enhance Toxicity

There are no chemicals known to enhance the toxicity of the product.

Animal Toxicology

Acute Toxicity

Inhalation LC 50: No Data
Oral LD 50: Believed to be 300 - 500 mg/kg. (rat); harmful if swallowed
Dermal LD 50: Believed to be > 2 g/kg. (rabbit)
Irritation: Causes burns to eyes and skin.

Acute Target Organ Toxicity

This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract.

Chronic Target Organ Toxicity

There are no known or reported effects from repeated exposure except that secondary to burns.

Reproductive and Developmental Toxicity

There are no known or reported effects on reproductive function or fetal development from exposure to this product.

Carcinogenicity

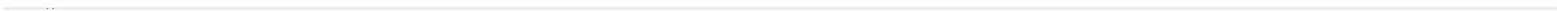
This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.
Ingestion of massive doses of sodium hydroxide has led to the development of tumors of the esophagus. The relevance of these findings to cancer is unknown due to repeated tissue destruction and scar formation as a result of the corrosive nature of sodium hydroxide.

Mutagenicity

Sodium hydroxide has been tested and was found to be non-mutagenic in the Ames



11





**MATERIAL
SAFETY DATA**

Product Name: Sodium Hydroxide Solution (50%)
Revision Date: March 10, 2004
Revision No.: 3

assay, a bacterial DNA-repair test and in the Syrian hamster embryo (SA7/SHE) cell transformation assay.

Aquatic Toxicity

Caustic soda is not lethal to fully developed fish in natural fresh waters until the pH becomes greater than 9.0:

- Lethal pH for Goldfish: 10.9
- Lethal pH for Bluegill sunfish: 10.5

Gambusia affinis (mosquito fish), 96 hr. LC50: 125 mg/l
Bluegill, 48 hr. LC50: 99 mg/l

X - TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT Description from the Hazardous Materials Table 49 CFR 172.101:

Land (U.S. DOT):	SODIUM HYDROXIDE SOLUTION, 8, UN1824, PG II
Water (IMO):	SAME AS ABOVE
Air (IATA/ICAO):	SAME AS ABOVE
Hazard Label/Placard:	CORROSIVE
Reportable Quantity:	1000 lbs. (Per 49 CFR 172.101, Appendix)
Emergency Guide:	154

XI - SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

Reportable Quantity: 1000 lbs. (Per 40 CFR 302.4)

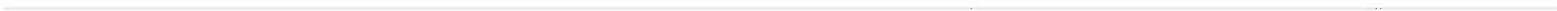
Spill Mitigation Procedures:

Hazardous concentrations in air may be found in local spill area in the form of a mist, which may cause skin irritation and breathing problems. Stop source of spill as soon as possible, if safe to do so.

Air Release:	Will normally be found in a mist form and evacuation from the mist area is the only advisable approach. Correction of the source of mist is of the utmost importance.
Water Release:	This material is heavier than and is soluble in water. This material is subject to emulsification and must be removed via a vacuum system or neutralized and absorbed as necessary, with various commercial absorbents, which are available. Notify all downstream industrial, municipal and public operation of this spill and advise them to monitor until otherwise notified.
Land Spill:	Dike or divert flow of material to a diked area as soon as possible. If necessary create an excavation large enough to contain the spill and associated neutralization materials. To reduce environmental damage, line the excavated surface with a material to which it is compatible and begin neutralization process or remove by vacuum, or pumping.



11





MATERIAL SAFETY DATA

Product Name: Sodium Hydroxide Solution (50%)
Revision Date: March 10, 2004
Revision No.: 3

Spill Residues:

Dispose of per guidelines under Section 12, WASTE DISPOSAL.

This material may be neutralized for disposal; you are requested to contact OCEAN at 888-2891-911 before beginning any such operation.

Personal Protection for Emergency Spill and Firefighting Situations:

In case of fire use normal fire fighting equipment (including self contained breathing apparatus: SCBA).

A hazardous physical characteristic of this product is: corrosive

XII - WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D002.

If this product becomes a waste, it will be a hazardous waste, which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.

As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

XIII - ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:

This substance is listed on the Toxic Substances Control Act inventory.

NSF LIMITS: NSF Maximum Drinking Water Use Concentration - 100 mg/l

**SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III:
HAZARD CATEGORIES, PER 40 CFR 370.2:**

HEALTH:

Immediate (Acute)

PHYSICAL:

None

**EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:
EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:**

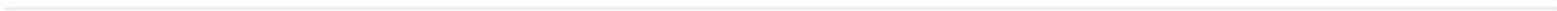
None Established

SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:

None Established



1





**MATERIAL
SAFETY DATA**

Product Name: Sodium Hydroxide Solution (50%)
Revision Date: March 10, 2004
Revision No.: 3

XIV - ADDITIONAL INFORMATION

XV - MAJOR REFERENCES

1. DeFlora, Silvio, et al., Genotoxic Activity and Potency of 135 Compounds in the Ames Reversion Test and in a Bacterial DNA-Repair Test. Mutation Research, Vol. 133, pp. 161-198, 1984.
2. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition, 1997. American Conference of Governmental Industrial Hygienists, Inc., Cincinnati, OH.
3. Federal Register, Vol. 53, No. 237, Friday, December 8, 1988, 49688-49690. 40 CFR Part 372, Sodium Hydroxide: Toxic Chemical Release Reporting, Community Right-to-Know.
4. AQUIRE Database (aquatic toxicity), Chemical Information Systems, Inc. (a division of PSI International, Inc.), Towson, MD.
5. TOXNET Database, U.S. National Library of Medicine, Bethesda, MD.
6. Forsberg, K., and S.Z. Mansdorf, Quick Selection Guide to Chemical Protective Clothing, Second Edition, Van Nostrand Reinhold, N.Y., 1993.
7. 3M 1995 Respirator Selection Guide. 3M Occupational Health and Environmental Safety Division, St. Paul, MN., 1995.

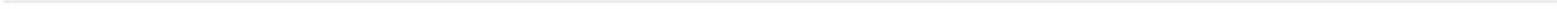
Other References are available upon request.

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MATERIAL SAFETY DATA SHEET IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER LISTED BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

ORC MSDS Control Group
Olin Chlor Alkali
1186 Lower River Road
P. O. Box 248
Charleston, TN 37310
Phone Number: (888)-658-MSDS (6737)



11





AMERICAN BORATE COMPANY MATERIAL SAFETY DATA SHEET

PRODUCT AND COMPANY INFORMATION

Product Name: Etibor 48 (Borax Pentahydrate)
Manufacturer: American Borate Company
5700 Cleveland Street, Suite 420
Virginia Beach, VA 23462
Telephone: (757) 490-2242 or (800) 486-1072

316

Emergency Contacts: Emergencies ONLY (after 5pm and weekends) CHEMTREC 1-800-424-9300
Date Prepared: 07-15-02

SECTION I - COMPONENT DATA - HAZARDOUS INGREDIENTS

<u>Chemical Name</u>	<u>Common Name</u>	<u>C.A.S. Number</u>
Sodium Tetraborate Pentahydrate Na ₂ B ₄ O ₇ *5H ₂ O	5 Mol Borax- Borax, Pentahydrate	12179-04-3 1330-43-4. (TSCA)

SECTION II - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Sodium Tetraborate Pentahydrate is a white odorless, powdered substance that is not flammable, combustible, or explosive, and it presents no unusual hazard if involved in a fire. Sodium Tetraborate Pentahydrate presents little or no hazard (to humans) and has low acute oral and dermal toxicities. Care should be taken to minimize the amount of Sodium Tetraborate Pentahydrate released to the environment to avoid ecological effects.

POTENTIAL ECOLOGICAL EFFECTS: Large amounts of Sodium Tetraborate Pentahydrate can be harmful to boron-sensitive plants and other ecological systems.

POTENTIAL HEALTH EFFECTS:

Routes of Exposure: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because Sodium Tetraborate Pentahydrate is not absorbed through intact skin.

Inhalation: Occasional mild irritation effects to nose and throat may occur from inhalation of Sodium Tetraborate Pentahydrate dusts at levels greater than 10mg/m³.

Eye Contact: Sodium Tetraborate Pentahydrate is non-irritating to eyes in normal industrial use.

Skin Contact: Sodium Tetraborate Pentahydrate does not cause irritation to intact skin.

Ingestion: Products containing Sodium Tetraborate Pentahydrate are not intended for ingestion. Sodium Tetraborate Pentahydrate has a relatively low acute toxicity. Small amounts (e.g., a teaspoonful) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

Cancer: Sodium Tetraborate Pentahydrate is not considered a carcinogen.

Reproductive: Long-term, high dose animal ingestion studies of similar inorganic borate chemicals have demonstrated reproductive effects in male animals. A human study of occupational exposure to borate dust showed no adverse effect to reproduction.

Development: High dose animal ingestion studies of similar inorganic borate chemicals have demonstrated developmental effects in fetuses of pregnant animals, including fetal weight loss. A human study showed no adverse effect.

Target Organs: No target organ has been identified in humans. High dose animal ingestion studies of similar inorganic borate chemicals indicate the testes are the target organs in male animals.

Signs and Symptoms of Exposure: Symptoms of accidental over-exposure to borate products have been associated with ingestion or by absorption through large areas of damaged skin. These may include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling.



11



SECTION III - PHYSICAL DATA

Appearance and Odor: Yafite Crystals, Orderless
Specific Gravity (H2O = 1): 1.82
Melting Point: 200°C (Decomposition) 741°C (Melt)
Vapor Pressure (mmHg @ 20°C): Negligible
Percent Volatile By Volume: 0
Solubility In Water: 0.39 Lb./Gallon @ 72°F

pH: 9.26 (.1 % solution at 20°C)
9.24 (1.0% solution at 20°C)
9.32 (3.7% solution at 20°C)

Formula Weight: 291.35

SECTION IV - FIRE & EXPLOSION HAZARD DATA

General Hazard: None
Flash Point (°F): NA
Method Used: NA
Flammability Limits: NEL: NA UEL: NA
Auto-Ignition Temperature (°F): NA
Extinguishing Media: NA (Noncombustible; inherent fire retardant)
Special Fire-Fighting Instructions: None
Unusual Fire and Explosion Hazards: None
Flammability Classification: 29 CFR 1910.120 (Non Flammable Solid)

This information and recommendations are based upon data believed to be accurate. However, no guarantee or warranty of any kind expressed or implied is made with respect to this information.

SECTION V - REACTIVITY DATA

Stability (Conditions to Avoid): Stable, loses H2O on heating
Incompatibility (Materials to Avoid): Elemental zirconium. Also, strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard.
Hazardous Decomposition Products: None known
Hazardous Polymerization: Will not occur

SECTION VI - HEALTH HAZARD DATA

Primary Route(s) of Entry: Inhalation, skin contact- and ingestion

Health Hazards (Acute and Chronic):

Inhalation-

Acute- Considered a nuisance dust, high concentrations may cause upper respiratory irritation.
Chronic- None known

Skin Contact-

Acute- Mild irritation or drying
Chronic- Not absorbed through intact skin, prolonged contact damages skin. May result in absorption of boron leading to systemic poisoning as seen with ingestion. See ingestion.

EYE CONTACT

Acute- Irritation
Chronic- None known

INGESTION

Acute- Nausea, vomiting, diarrhea, possibly followed by weakness, depression and headache. Skin rashes, cracked lips, and loss of hair may follow ingestion. Shock may occur following ingestion of large quantities.
Chronic- Same as acute.

Signs and Symptoms of Exposure: Respiratory, skin or eye irritation, nausea, vomiting, and diarrhea from ingestion.
Medical Conditions Generally Aggravated by Exposure: None Known



11



SECTION VI - HEALTH HAZARD DATA - CONTINUED

EXPOSURE LIMITS:

<u>Hazardous Ingredient</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>CAL OSHA</u>
Sodium Tetraborate Pentahydrate	10 mg/m ³	1 mg/m ³	5 mg/m ³

CARCINOGENICITY:

<u>Chemical Components</u>	<u>NTP Listed</u>	<u>IARC Listed</u>	<u>OSHA Regulated</u>
Sodium Tetraborate Pentahydrate	No	No	No

SECTION VII - EMERGENCY & FIRST AID PROCEDURES

Inhalation - Remove to fresh air. Seek medical attention if irritation persists. **Skin** - Wash with water. If irritation persists, seek medical attention. **Eyes** - Wash with running water for at least 15 minutes. Seek medical attention. **Ingestion** - Obtain medical attention as soon as possible. Note to Physicians: Observation only is required for adult ingestion of a few grams of Sodium Tetraborate Pentahydrate. **Ingestion** of larger amounts, maintain adequate kidney function and force liquids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analyses of urine should not be used to evaluate severity of poisoning or to guide treatment.

SECTION VIII - SPECIAL HANDLING INFORMATION

Ventilation: Natural
Respiratory Protection: A NIOSH/MSHA approved nuisance dust mask should be worn to prevent irritation if exposure exceeds guidelines.
Protective Clothing: Goggles, gloves, and long sleeved clothing to prevent excessive contact with dry materials.
Work/Hygienic Practices: No special requirements.

SECTION IX - SPILL, LEAK, & DISPOSAL PROCEDURES

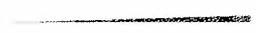
Action To Take For Spills (Use Appropriate Safety Equipment): Sweep up
Waste Disposal Method: As an inert solid waste in accordance with state, local, and federal regulations.
California: Sodium Tetraborate Pentahydrate is a "hazardous waste" in California and should be handled in accordance with state regulations.
EPA Hazardous Waste Number: None
RCRA (40 CFR 261): Sodium Tetraborate Pentahydrate is not listed under any sections of the Federal Resource Conservation and Recovery Act.
Water Spill: Sodium Tetraborate Pentahydrate will cause localized contamination of surrounding waters based on the quantity dissolved in these waters. At high concentrations, some damage to local vegetation, fish, and other aquatic life may be expected. Advise local water authority that none of the affected water should be used for irrigation or for potable water until natural dilution returns boron level to normal.

SECTION X - TRANSPORTATION

Precautions To Be Taken In Handling and Storage: Store in dry location.



11/11/11



DOT Information:

Hazardous Material Proper Shipping Name: Not hazardous

Hazard Class: Not hazardous

UN Identification Number: None

Sodium Tetraborate Pentahydrate is not regulated under international rail, highway, water or air transport regulations.

SECTION XI – REGULATORY INFORMATION

TSCA No.: Sodium Tetraborate Pentahydrate appears on the EPA TSCA inventory list under the CAS no. 1330-43-4, which represents the anhydrous form of this inorganic salt.

RCRA: Sodium Tetraborate Pentahydrate is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act or regulations (40 CFR 261 et seq.).

Superfund: CERCLA/SARA. Sodium Tetraborate Pentahydrate is not listed under CERCLA (the Comprehensive Environmental Response Compensation and Liability Act) or its 1986 amendments, SARA, (the Superfund Amendments and Reauthorization Act), including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65; Section 302 of SARA, Extremely Hazardous Substances, 42 USC 11002, 40 CFR 355; or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302.

Safe Drinking Water Act: Sodium Tetraborate Pentahydrate is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 et seq. Consult state and local regulations for possible water quality advisories regarding Boron.
Clean Water Act (Federal Water Pollution Control Act): 33 USC 1251 et seq.

- (a) Sodium Tetraborate Pentahydrate is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314.
- (b) It is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 129.
- (c) It is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116.

OSHA/Cal OSHA: This MSDS document meets the requirements of both OSHA (29 CFR 1910.1200) and Cal OSHA (Title 8 CCR 5194(g)) hazard communication standards. Refer to Section 6 for regulatory exposure limits.

IARC: The International Agency for Research on Cancer (of the World Health Organization) does not list or categorize Sodium Tetraborate Pentahydrate as a carcinogen.

NTP Annual Report on Carcinogens: Sodium Tetraborate Pentahydrate is not listed.

OSHA Carcinogen: Sodium Tetraborate Pentahydrate is not listed.

California Proposition 65: Sodium Tetraborate Pentahydrate is not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

CONEG Model Legislation: Sodium Tetraborate Pentahydrate meets all the CONEG requirements relating to heavy metal limitations on components of packaging materials.

Clean Air Act: Sodium Tetraborate Pentahydrate was not manufactured with and does not contain any Class I or Class II ozone depleting substances, as defined by EPA.

Federal Food, Drug and Cosmetic Act: Pursuant to 21 CFR 175.105, 176.180 and 181.30, Sodium Tetraborate Pentahydrate is approved by the FDA for use in adhesive components of packaging materials, as a component of paper coatings on such materials, or for use in the manufacture, thereof, which materials are expected to come in contact with dry food products.

Chemical Inventory Listing

- US EPA TSCA 1330-43-4
- Canadian DSL 1330-43-4
- EINECS 215-540-4
- South Korea 1-760
- Japanese MITI (1)-69

Federal Food, Drug, and Cosmetic ACT:

Pursuant to 21 CFR 175.105, 176.108 and 181.30, Sodium Tetraborate Pentahydrate is approved by the FDA for use in adhesive components of packaging materials, as a component of paper coatings on such materials or for use in the manufacture, thereof, which materials are expected to come in contact with dry food products.

SECTION XII – OTHER INFORMATION



11/11/11



Product Label Text Hazard Information:

-May be harmful if swallowed. -May cause reproductive harm or birth defects based on animal data. -Avoid contamination of food or feed. -Not for food, drug or pesticidal use.

-Refer to MSDS.

KEEP OUT OF REACH OF CHILDREN.

National Fire Protection Association (NFPA)

Classification:

Health 0
Flammability 0
Reactivity 0

Hazardous Materials Information Systems (HMIS):

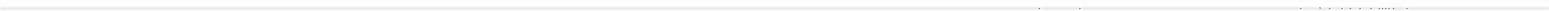
Red: (Flammability) 0
Yellow: (Reactivity) 0
Blue: (Acute Health) 1*

*Chronic Effects

**CONTACT AMERICAN BORATE COMPANY
FOR FURTHER INFORMATION:
(757) 490-2242**



12/12/20



821

PRODUCT NUMBER 29-955A

Print date: 08-March-2007

National Starch & Chemical
A member of the ICI Group

*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER 29-955A
PRODUCT NAME VELOCITY @ SP
liquid adhesive
Manufacturer National Starch & Chemical Company
Adhesives Division
P.O. Box 6500, 10 Finderne Avenue
USA
EMERGENCY PHONES:
MEDICAL: 866-359-5657 (Health & Safety Call Center-24 hours)
TRANSPORT: CHEMTREC: 800-424-9300 (24 hours)
CHEMTREC International: 703-527-3887 (call collect)
Corporate Emergency Phone: 908-685-5100 (24 hours)
MSDS Requests/Customer Service: See phone numbers in Section 16

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY Water Solution of Soluble Polymers
COMPONENT CAS NUMBER CONCENTRATION
(% by weight)
None classified as hazardous under the OSHA Hazard
Communication Standard (29CFR 1910.1200).

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Not considered as hazardous.
Colorless Liquid Negligible odor

EYE
SKIN CONTACT
INHALATION

Slight/mild irritant.
Repeated or prolonged skin contact may result in mild irritation.
Vapors and/or aerosols which may be formed at elevated temperatures may be
irritating to eyes and respiratory tract.
Ingestion may cause irritation of the gastrointestinal tract.

INGESTION



4. FIRST-AID MEASURES

EYE	Irrigate with eyewash solution or clean water until pain is relieved. Obtain medical attention.
SKIN CONTACT	Wash skin with soap and water. If symptoms develop, obtain medical attention.
INHALATION	Remove to fresh air. Get medical attention if irritation persists.
INGESTION	Treat symptomatically and supportively. Get medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Not available
FLASH POINT	> 212°F
EXTINGUISHING MEDIA	Water spray or fog, CO2, dry chemical; Foam
SPECIAL FIREFIGHTING PROCEDURES	Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.
FIRE & EXPLOSION HAZARDS	This is a water-based product and presents no particular fire or explosion hazard. Dry polymer film will burn. Product contains low level of organic volatiles which may be emitted at elevated temperatures.
HAZARDOUS COMBUSTION PRODUCTS	Carbon monoxide, carbon dioxide, unknown hydrocarbons.
LOWER EXPLOSION LIMIT (%)	Not applicable
UPPER EXPLOSION LIMIT (%)	Not applicable

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	Absorb spillages onto sand, earth or any suitable absorbent material. Sweep up and shovel into waste drums. Wash the spillage area with water. Washings must be prevented from entering surface water drains. Disposal should be in accordance with local, state or national legislation.
---------------------------	---

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE	40 - 100°F
HANDLING/STORAGE	Avoid extreme temperatures. Protect from freezing. This material should not be spilled, discharged, or flushed into sewers or public waterways. Product contains low level of organic volatiles which could accumulate in the unvented headspace of drums or bulk storage vessels. Open drums in well ventilated area. Avoid breathing vapors.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS	None required if good ventilation is maintained.
--------------------------	--



4



EYE PROTECTION REQUIREMENTS	Wear safety glasses with side shields. Protect against splashing.
GLOVE REQUIREMENTS	The use of chemically resistant gloves is recommended.
CLOTHING REQUIREMENTS	Uniforms, coveralls, or a lab coat should be worn. Rubber boots and apron if exposure is severe.
CHANGE/REMOVAL OF CLOTHING	Remove contaminated clothing and launder before reuse.
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS	None required under normal handling conditions. Use NIOSH approved respirator if vapor or mist levels are irritating.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE	Mixture
PHYSICAL FORM	Liquid
COLOR	Colorless
ODOR	Negligible
ODOR THRESHOLD	Not available
PH AS IS	Approximately 6.5
pH IN (1%) SOLUTION	Not applicable
OXIDIZING PROPERTIES	Not applicable
BOILING POINT	> 212°F
MELTING/FREEZING POINT	Approximately 32°F
SOLUBILITY IN WATER	Miscible
PARTITION COEFFICIENT (n-octanol/water)	Not applicable
SPECIFIC GRAVITY (WATER=1)	1.032
BULK DENSITY	8.6lb/gal
EVAPORATION RATE	1(Water = 1)
VAPOR PRESSURE (mmHg)	17.5@ 20°C
VAPOR DENSITY (air = 1)	> 1.0
VOLATILES	Approximately 82%/wt
VOLATILE ORGANIC COMPOUNDS	Estimated to be < 0.005lb/gal
AUTOIGNITION	Not available
FLASH POINT	> 212°F

10. STABILITY AND REACTIVITY

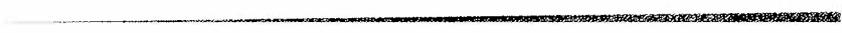
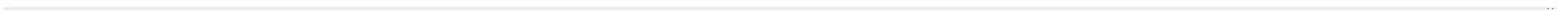
STABILITY	Stable
MATERIALS TO AVOID	Strong oxidizers, Materials that react with water
CONDITIONS TO AVOID	Protect from temperatures below 40F.
HAZARDOUS POLYMERIZATION CONDITIONS	Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY	Eye Contact; Skin Contact; Inhalation; Ingestion		
CARCINOGEN	<u>IARC</u>	<u>NTP</u>	<u>OSHA Substance</u>
COMPONENT	<u>(group)</u>		<u>Specific Regulation</u>



11



PRODUCT NUMBER 29-955A

Print date: 08-March-2007

There is no evidence that this product poses a carcinogenic risk under normal conditions of handling and use.	No	No	Not Listed
---	----	----	------------

**PRODUCT TOXICOLOGY
PRODUCT INFORMATION**

Unlikely to cause harmful effects under recommended conditions of handling and use.

ACUTE (SHORT TERM) EFFECTS OF EXPOSURE

**CHRONIC (LONG TERM) EFFECTS OF EXPOSURE
EFFECTS OF CHRONIC EXPOSURE**

The toxicological properties of this product have not been fully evaluated. Use of good industrial hygiene practices is required. Avoid direct contact with skin or eyes. Do not ingest or inhale.
Not applicable.

TARGET ORGANS

12. ECOLOGICAL INFORMATION

**POTENTIAL TO BIOACCUMULATE
AQUATIC TOXICITY**

Unknown.
None Established

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS	Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER WARNINGS	Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

This section provided for general information only. The shipping description below may not represent requirements for all modes of transportation, packaging, shipping methods or locations outside of the United States.

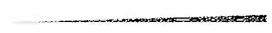
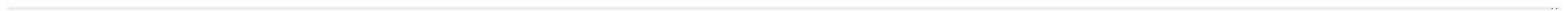
FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

DOT CLASSIFICATION Not applicable.

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.



1



PRODUCT NUMBER 29-955A

Print date: 08-March-2007

15. REGULATORY INFORMATION

USA
TSCA

This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.

SARA - Section 313 (Superfund Amendments and Reauthorization Act of 1986 - 40CFR 372)

CAS NUMBER

CONCENTRATION
(% by weight)

Contains no substances at or above the reporting threshold under Section 313.

CALIFORNIA PROPOSITION 65

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace amounts.

COMPONENT

CAS NUMBER

None reportable.

16. OTHER INFORMATION

HMIS® Hazard Ratings

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs by OSHA's 29 CFR 1910.1200, we choose to provide them as a service to our customers using HMIS®. These ratings are to be used only with a fully implemented HMIS® program. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

NPCA recommends that employers must determine appropriate PPE for the actual conditions under which this product is used in their workplace. For information on PPE codes, consult the HMIS® Implementation Manual.

When two ratings are provided for Health, the first represents the material 'as supplied', and the second represents the material 'in use'.

* = chronic health hazard

HMIS® is a registered trademark of the National Paint and Coatings Association (NPCA).

Health

1

Flammability

0

Reactivity

0

MSDS DATE

FOR INFORMATION CONTACT:

30-January-2007

National Starch & Chemical Company

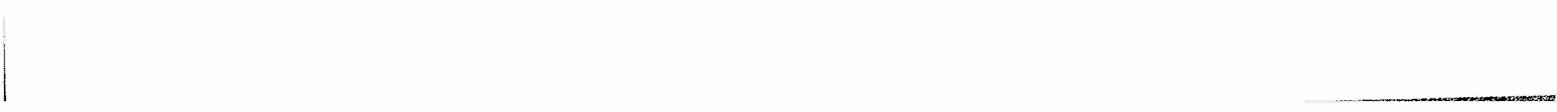
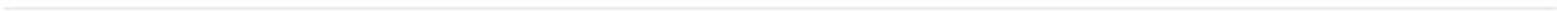
Adhesive Division

for Product Information:

Customer Relations: 1-888-480-6885



11



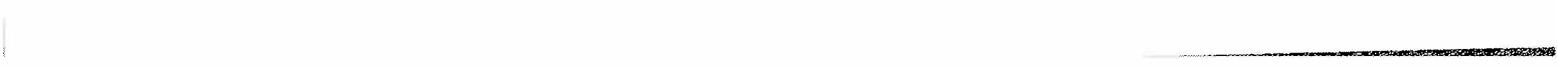
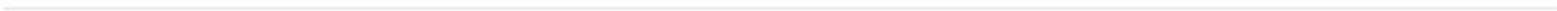
PRODUCT NUMBER 29-955A

Print date: 08-March-2007

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.



1



410

NATIONAL STARCH AND CHEMICAL
PRODUCT NUMBER 33-9201

14-May-2003

National Starch & Chemical
A member of the ICI Group

MAY 17 2003

*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER 33-9201
PRODUCT NAME RESYN ® 33-9201
synthetic adhesive
Manufacturer National Starch & Chemical Company
Adhesives Division
P.O. Box 6500, 10 Findeme Avenue
Bridgewater, NJ 08807
USA
EMERGENCY TELEPHONE: 908-685-5100 (24 hours - US only)
CHEMTREC: 800-424-9300 (24 hours)
CHEMTREC International: 703-527-3887 (call collect)
MSDS Requests/Customer Service: See phone numbers in Section 16

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY Water Solution of Soluble Polymers
COMPONENT
NONE HAZARDOUS CAS NUMBER CONCENTRATION (%)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Not considered as hazardous.
White Liquid Slight odor

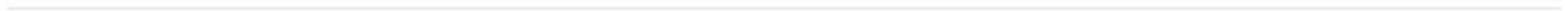
EYE Slight/mild irritant.
SKIN CONTACT Repeated or prolonged skin contact may result in mild irritation.
INHALATION Vapor may be irritant to the respiratory tract.
INGESTION Ingestion may cause irritation of the gastrointestinal tract.

4. FIRST-AID MEASURES

EYE Irrigate with eyewash solution or clean water until pain is relieved. Obtain medical attention.
SKIN CONTACT Wash skin with soap and water. If symptoms develop, obtain medical attention.
INHALATION Remove to fresh air. Get medical attention if irritation persists.



11



NATIONAL STARCH AND CHEMICAL

PRODUCT NUMBER 33-9201

14-May-2003

INGESTION

Treat symptomatically and supportively. Get medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Unknown
FLASH POINT	> 212 °F
EXTINGUISHING MEDIA	Water spray or fog, CO2, dry chemical; Foam
SPECIAL FIREFIGHTING PROCEDURES	Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.
FIRE & EXPLOSION HAZARDS	This is a water-based product and presents no particular fire or explosion hazard. Dry polymer film will burn. Product contains low level of organic volatiles which may be emitted at elevated temperatures.
HAZARDOUS COMBUSTION PRODUCTS	Carbon monoxide, carbon dioxide, unknown hydrocarbons.
LOWER EXPLOSION LIMIT (%)	Not applicable
UPPER EXPLOSION LIMIT (%)	Not applicable
FLAMMABILITY HAZARD CLASS	0 = Insignificant.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	Absorb spillages onto sand, earth or any suitable absorbent material. Sweep up and shovel into waste drums. Wash the spillage area with water. Washings must be prevented from entering surface water drains. Disposal should be in accordance with local, state or national legislation.
---------------------------	---

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE	40 - 100 °F
HANDLING/STORAGE	Avoid extreme temperatures. Protect from freezing. This material should not be spilled, discharged, or flushed into sewers or public waterways. Product contains low level of organic volatiles which could accumulate in the unvented headspace of drums or bulk storage vessels. Open drums in well ventilated area. Avoid breathing vapors.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENT

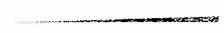
EXPOSURE LIMITS

VENTILATION REQUIREMENTS

None required if good ventilation is maintained.



11/11/11



NATIONAL STARCH AND CHEMICAL

PRODUCT NUMBER 33-9201

14-May-2003

EYE PROTECTION REQUIREMENTS	Wear safety glasses with side shields. Protect against splashing.
GLOVE REQUIREMENTS	The use of chemically resistant gloves is recommended.
CLOTHING REQUIREMENTS	Uniforms, coveralls, or a lab coat should be worn. Rubber boots and apron if exposure is severe.
CHANGE/REMOVAL OF CLOTHING	Remove contaminated clothing and launder before reuse.
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS	None required under normal handling conditions. Use NIOSH approved respirator if vapor or mist levels are irritating.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE	Mixture
PHYSICAL FORM	Liquid
COLOR	White
ODOR	Slight
ODOR THRESHOLD	Not available
PH AS IS	5
pH IN (1%) SOLUTION	Not applicable
OXIDIZING PROPERTIES	Not applicable
BOILING POINT	> 212 °F
MELTING/FREEZING POINT	< 40 °F
SOLUBILITY IN WATER	Miscible
PARTITION COEFFICIENT (n-octanol/water)	Not applicable
SPECIFIC GRAVITY (WATER=1)	1.09
BULK DENSITY	9.1 lb/gal
EVAPORATION RATE	1 (Water = 1)
VAPOR PRESSURE (mmHg)	17.5 @ 20°C
VAPOR DENSITY (air = 1)	0.62
VOLATILES	Approximately 47 %/wt
VOLATILE ORGANIC COMPOUNDS	Estimated to be 0.4268 lb/gal Estimated to be 4.69 %/wt
AUTOIGNITION	Unknown
FLASH POINT	> 212 °F

10. STABILITY AND REACTIVITY

STABILITY	Stable
MATERIALS TO AVOID	Strong oxidizers, Materials that react with water
CONDITIONS TO AVOID	Protect from temperatures below 40F.
REACTIVITY HAZARD CLASS	0 = Stable
HAZARDOUS POLYMERIZATION	Hazardous polymerization will not occur.
CONDITIONS	

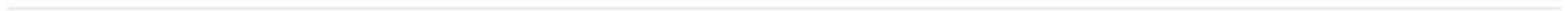
11. TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY	Eye Contact; Skin Contact; Inhalation; Ingestion
----------------	--

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE



11



NATIONAL STARCH AND CHEMICAL

PRODUCT NUMBER 33-9201

14-May-2003

EFFECTS OF CHRONIC EXPOSURE

The toxicological properties of this product have not been fully evaluated. Use of good industrial hygiene practices is required. Avoid direct contact with skin or eyes. Do not ingest or inhale.

TARGET ORGANS
CARCINOGEN

Not applicable.
No.

PRODUCT TOXICOLOGY PRODUCT INFORMATION

Unlikely to cause harmful effects under recommended conditions of handling and use.

12. ECOLOGICAL INFORMATION

POTENTIAL TO BIOACCUMULATE
AQUATIC TOXICITY

Unknown.
None Established

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER WARNINGS Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

This section provided for general information only.
FOR NON-BULK SHIPMENTS.
FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

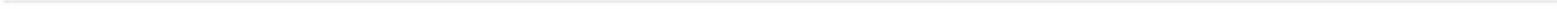
DOT CLASSIFICATION

PROPER SHIPPING NAME Not regulated
U.N. NUMBER UNKNOWN

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

15. REGULATORY INFORMATION

USA



NATIONAL STARCH AND CHEMICAL

PRODUCT NUMBER 33-9201

14-May-2003

TSCA

All components are on the TSCA inventory.

SARA/TITLE III

CAS NUMBER

CONCENTRATION (%)

Contains no substances at or above the reporting threshold under Section 313.

CALIFORNIA PROPOSITION 65

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace amounts.

COMPONENT

CAS NUMBER

Propylene oxide

75-56-9

Acetaldehyde

75-07-0

Ethylene oxide

75-21-8

1,4-Dioxane

123-91-1

16. OTHER INFORMATION

MSDS DATE

14-May-2003

FOR INFORMATION CONTACT:

National Starch & Chemical Company

Adhesive Division

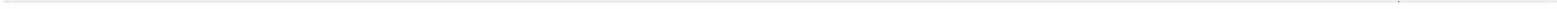
Product Information:

Customer Relations: 1-888-480-6885

CHANGES SINCE PREVIOUS ISSUE

Section 15

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.



784



Cargill Incorporated

Material Safety Data Sheet

SECTION 1
CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Unmodified Starch
Product Number: 1XXX
Manufacturer's Name and Address: Cargill, Inc.
1710 16th St. SE
Cedar Rapids, IA 52401
(800) 437-8043
MSDS Preparation Date: 10/05/2001

SECTION 2
COMPOSITION, INFORMATION ON INGREDIENTS

Component	% by Weight	CAS Number
Corn Starch	88 - 92	9005-25-8

SECTION 3
HAZARDS IDENTIFICATION

Powdered material may form explosive dust-air mixtures.

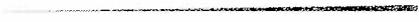
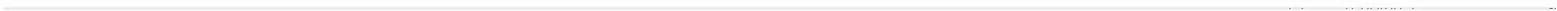
Eyes: May cause slight irritation
Inhalation: No hazard in normal industrial use
Skin: No hazard in normal industrial use
Ingestion: No hazard in normal industrial use

SECTION 4
FIRST AID MEASURES

Ingestion: None
Skin: Wash with soap and water.
Eyes: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.
Inhalation: No specific treatment is necessary since this material is not likely to be hazardous by inhalation.



11



**SECTION 5
FIRE FIGHTING MEASURES**

Flammable Properties

Flash Point:	Not Applicable
Upper Explosion Limit (%):	Not Applicable
Lower Explosion Limit (%):	Not Applicable
NFPA Flammability Hazard Class:	1
Autoignition/Explosion and Fire Hazards:	Minimum ignition temperature of dust cloud is 680 degrees F. Minimum dust concentration in cloud for explosion to occur is 80mg/l.

Extinguishing Media: Water, Dry chemical, CO2, Foam
Fire Fighting Instructions: Avoid procedures that could cause a dust cloud to be formed.

**SECTION 6
ACCIDENTAL RELEASE MEASURES**

Spill and Leak Procedures: Vacuum or sweep up material and place in a disposal container. Avoid procedures that could cause a dust cloud to be formed.

Waste Disposal Method: Waste disposal should be in accordance with existing federal, state and local environmental regulations.

**SECTION 7
HANDLING AND STORAGE**

Handling: Use with adequate ventilation.
May form flammable dust-air mixtures.

Storage: Use spark-proof tools and explosion-proof equipment.
Store in dry area.

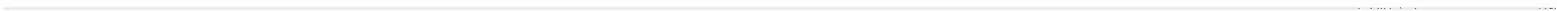
**SECTION 8
EXPOSURE CONTROLS, PERSONAL PROTECTION**

**ENGINEERING CONTROLS:
PERSONAL PROTECTIVE EQUIPMENT**

Eye/Face Protection:	Good general ventilation should be sufficient to control airborne levels.
Skin Protection:	Safety glasses/shields are optional.
Respiratory Protection:	Not Applicable NIOSH approved dust mask.



1



**SECTION 9
PHYSICAL AND CHEMICAL PROPERTIES**

Appearance/Odor:	White oderless powder
Physical State:	Solid
pH (as is):	Not Applicable
pH (In 20% solution):	3.5 - 8.0
Vapor Pressure:	Not Applicable
Vapor Density (Air = 1.0):	Not Applicable
Boiling Point:	Not Applicable
Melting/Freezing Point:	Not Applicable
Solubility in water:	Insoluble
Specific Gravity:	1.5

**SECTION 10
STABILITY AND REACTIVITY**

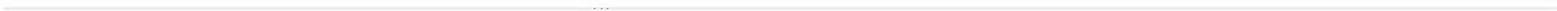
Chemical Stability:	Stable
Conditions to Avoid:	None
Incompatibility with Other Materials:	Oxidizing materials
Hazardous Decomposition Products:	None
Hazardous Polymerization:	Product will not undergo polymerization
NFPA Reactivity Hazard Class:	0 (Insignificant)

**SECTION 11
TOXICOLOGICAL INFORMATION**

Route(s) of Entry	
Inhalation:	Nuisance Dust
Skin:	None
Ingestion:	None
Health Hazards (Acute and Chronic)	None
Carcinogenicity	
NTP:	No
IARC Monographs:	No
OSHA Regulated:	No

**SECTION 12
ECOLOGICAL INFORMATION**

Not available



**SECTION 13
DISPOSAL CONSIDERATIONS**

Waste Disposal Method:

Waste disposal should be in accordance with existing federal, state and local environmental regulations.

**SECTION 14
TRANSPORT INFORMATION**

DOT Information:

Not Applicable

**SECTION 15
REGULATORY INFORMATION**

TSCA:

On TSCA Inventory

FDA:

This product is manufactured under one or more of the following sections of CFR21: 182.1, 178.3520, 176.180, 176.170, 172.892,170.30

SARA/TITLE III:

This product contains no substances at or above the reporting threshold under Section 313, based on data currently available.

**SECTION 16
OTHER INFORMATION**

MSDS Revision Date:

11/16/2004

For further information contact:

(319)-399-2184



PRODUCT NUMBER 29-976A

Print date: 08-May-2007

National Starch & Chemical
A member of the ICI Group

538

*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER 29-976A
PRODUCT NAME DACREZ ® 29-976A
food packaging adhesive
Manufacturer National Starch & Chemical Company
Adhesives Division
P.O. Box 6500, 10 Funderne Avenue
USA
EMERGENCY PHONES:
MEDICAL: 866-359-5657 (Health & Safety Call Center-24 hours)
TRANSPORT: CHEMTREC: 800-424-9300 (24 hours)
CHEMTREC International: 703-527-3887 (call collect)
Corporate Emergency Phone: 908-685-5100 (24 hours)
MSDS Requests/Customer Service: See phone numbers in Section 16

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY COMPONENT	Ketone Aldehyde	CAS NUMBER	CONCENTRATION (% by weight)
NONE HAZARDOUS			

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Not considered as hazardous.
Red Liquid Slight odor

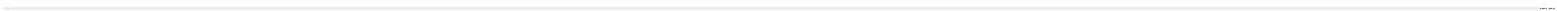
EYE Slight/mild irritant.
SKIN CONTACT Repeated or prolonged skin contact may result in mild irritation.
INHALATION Vapor may be irritant to the respiratory tract.
INGESTION Ingestion may cause irritation of the gastrointestinal tract. Low oral toxicity.

4. FIRST-AID MEASURES

EYE Irrigate with eyewash solution or clean water until pain is relieved.
SKIN CONTACT Wash skin with soap and water.
INHALATION Remove to fresh air. Administer oxygen to aid breathing. Get medical attention.



11



PRODUCT NUMBER 29-976A

Print date: 08-May-2007

INGESTION

Treat symptomatically and supportively. Get medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Not available
FLASH POINT	> 100 °C (Pensky-Martens Closed Tester)
EXTINGUISHING MEDIA	Alcohol Foam; Water spray or fog, CO ₂ , dry chemical; Foam
SPECIAL FIREFIGHTING PROCEDURES	Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.; This is a water-based product and presents no particular fire or explosion hazard.; Dry polymer film will burn.
FIRE & EXPLOSION HAZARDS	No unusual hazards are expected.
HAZARDOUS COMBUSTION PRODUCTS	Thermal decomposition could result in the formation of oxides of organic polymers.
LOWER EXPLOSION LIMIT (%)	Not applicable
UPPER EXPLOSION LIMIT (%)	Not applicable

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	Absorb spillages onto sand, earth or any suitable absorbent material. Sweep up and shovel into waste drums. Disposal should be in accordance with local, state or national legislation.
---------------------------	---

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

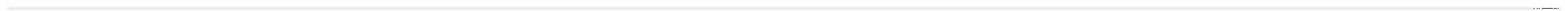
STORAGE TEMPERATURE	Ambient.
HANDLING/STORAGE	Avoid extreme temperatures. Protect from freezing. This material should not be spilled, discharged, or flushed into sewers or public waterways.
SENSITIVITY TO STATIC ELECTRICITY	No
SENSITIVITY TO MECHANICAL IMPACT	No

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS	Mechanical ventilation recommended. Open drums in well-ventilated area.
EYE PROTECTION REQUIREMENTS	Wear safety glasses with side shields. Eye washing equipment must be provided at handling points.
GLOVE REQUIREMENTS	The use of chemically resistant gloves is recommended.
CLOTHING REQUIREMENTS	Appropriate protective clothing and equipment is recommended to minimize skin contact with this substance.



Small, illegible text or markings in the top right corner.



PRODUCT NUMBER 29-976A

Print date: 08-May-2007

CHANGE/REMOVAL OF CLOTHING Remove contaminated clothing and launder before reuse.
WASH REQUIREMENTS Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS None required under normal handling conditions. Use NIOSH approved respirator if vapor or mist levels are irritating.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE	Mixture
PHYSICAL FORM	Liquid
COLOR	Red
ODOR	Slight
ODOR THRESHOLD	Not available
PH AS IS	Approximately 5.5
pH IN (1%) SOLUTION	Not applicable
OXIDIZING PROPERTIES	Not applicable
BOILING POINT	Approximately 212 °F
MELTING/FREEZING POINT	Approximately 32 °F
SOLUBILITY IN WATER	Miscible
PARTITION COEFFICIENT (n-octanol/water)	Not applicable
SPECIFIC GRAVITY (WATER=1)	1.13
BULK DENSITY	Not available
EVAPORATION RATE	1 (Water = 1)
VAPOR PRESSURE (mmHg)	17 @ 20°C
VAPOR DENSITY (air = 1)	0.62
VOLATILES	Approximately 4.7 lb/gal
VOLATILE ORGANIC COMPOUNDS	Estimated to be 0.06 lb/gal
AUTOIGNITION	Not available
FLASH POINT	> 100 °C (Pensky-Martens Closed Tester)

10. STABILITY AND REACTIVITY

STABILITY	Stable
MATERIALS TO AVOID	Materials that react with water
HAZARDOUS DECOMPOSITION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon dioxide, carbon monoxide, and smoke.

11. TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY	Skin Contact; Eye Contact; Inhalation
----------------	---------------------------------------

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

EFFECTS OF CHRONIC EXPOSURE

The toxicological properties of this product have not been fully evaluated. Use of good industrial hygiene practices is required. Avoid direct contact with skin or eyes. Do not ingest or inhale.

CARCINOGEN

No.

PRODUCT TOXICOLOGY



1



PRODUCT NUMBER 29-976A

Print date: 08-May-2007

PRODUCT INFORMATION

Unlikely to cause harmful effects under recommended conditions of handling and use.

12. ECOLOGICAL INFORMATION

POTENTIAL TO BIOACCUMULATE	Unknown.
AQUATIC TOXICITY	Not tested

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS	Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER WARNINGS	Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

This section provided for general information only. The shipping description below may not represent requirements for all modes of transportation, packaging, shipping methods or locations outside of the United States.

FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

DOT CLASSIFICATION Not applicable.

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

15. REGULATORY INFORMATION

USA
TSCA

This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.

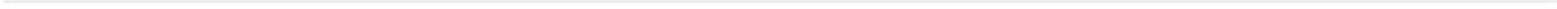
SARA - Section 313 (Superfund Amendments and Reauthorization Act of 1986 - 40CFR 372)
Contains no substances at or above the reporting threshold under Section 313.

CAS NUMBER

CONCENTRATION
(% by weight)



11



PRODUCT NUMBER 29-976A

Print date: 08-May-2007

CALIFORNIA PROPOSITION 65

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace amounts.

COMPONENT
Formaldehyde

CAS NUMBER
50-00-0

16. OTHER INFORMATION

HMIS® Hazard Ratings

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs by OSHA's 29 CFR 1910.1200, we choose to provide them as a service to our customers using HMIS®. These ratings are to be used only with a fully implemented HMIS® program. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

NPCA recommends that employers must determine appropriate PPE for the actual conditions under which this product is used in their workplace. For information on PPE codes, consult the HMIS® Implementation Manual.

When two ratings are provided for Health, the first represents the material 'as supplied', and the second represents the material 'in use'.

* = chronic health hazard

HMIS® is a registered trademark of the National Paint and Coatings Association (NPCA).

<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
1	0	0

MSDS DATE

04-June-2004

FOR INFORMATION CONTACT:

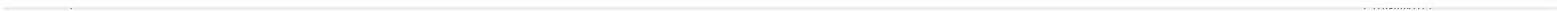
National Starch & Chemical Company
Adhesive Division
for Product Information:

Customer Relations: 1-888-480-6885

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.



1



MATERIAL SAFETY DATA SHEET



Date Printed: 11/20/2007

Page

PRODUCT NAME: ECO CORR 9, GCMI 90 BLACK
PRODUCT CODE: EC9 90 5

790

HMIS CODES: HFRP

1 0 0

*****SECTION 1-MANUFACTURER IDENTIFICATION*****

MANUFACTURER'S NAME: OPTIHUE INKS
ADDRESS: 808 FONTAINE
KENTON, OHIO 43326

EMERGENCY PHONE: 1-419-673-0711
INFORMATION PHONE: 1-800-422-4657

MSDS REVISION DATE: 10/24/07

NAME OF PREPARER: Bill Dewulf

*****HAZARDOUS INGREDIENTS/SARA 111 INFORMATION*****

REPORTABLE COMPONENTS

	CAS NUMBER	WEIGHT PERCENT
* AMMONIUM HYDROXIDE		
AMMONIA 21 DEGREE-OHSA PEL STEL *35ppm, AGGIH TLV *25 ppm, STEL *35 ppm	1336-21-6	0 TO 5 PERCENT
Sodium hydroxide		
OSHA PEL 2.000 mg/m3-TWA OSHA VPEL 2.000 mg/ms-Ceiling	1310-73-2	0 TO 5 PERCENT
* STYRENE	100-42-5	0 TO 5 PERCENT

* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.
* Indicates chemicals listed under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65).

!!!NOTE: Not all items listed above are hazardous.

NO KNOWN CANCER EFFECTS

*****SECTION III-PHYSICAL/CHEMICAL CHARACTERISTICS*****

BOILING RANGE: 173-220F

WEIGHT PER GALLON: 10.168953 lb/gal

VAPOR DENSITY: Heavier than air

EVAPORATION RATE: SLOWER THAN ETHER

VOC PERCENT: .44

VOLATILE WT% 51.2

SOLUBILITY IN WATER: Miscible

APPEARANCE AND ODOR: BLACK IN COLOR, AMMONIACAL ODOR.

VISCOSITY: 30 TO 35 ZAHN 2.

PH: pH: 8.9 TO 9.5

*****SECTION IV-FIRE AND EXPLSION HAZARD DATA*****

FLASH POINT: Greater than 200F

METHOD USED: CALCULATED

EXTINGUISHING MEDIA: ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, OTHER

SPECIAL FIREFIGHTING PROCEDURES:

Respiratory equipment should be worn to avoid inhalation of concentrated vapors. Water should not be used except as fog to keep nearby containers cool.

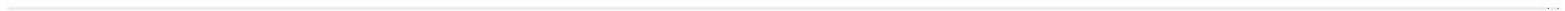
UNUSUAL FIRE AND EXPLOSION HAZARDS:

SMOKE WITH ANY BURNING ORGANIC MATERIAL SMOKE, FUMES AND OXIDES OF CARBON, MAY BE PRODUCED.

NOV 21 2007



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 11/20/2007

Page:



*****SECTION V-REACTIVITY DATA*****

STABILITY: STABLE

CONDITIONS TO AVOID: Excessive heat, poor ventilation, corrosive atmospheres, excessive aging.

INCOMPATIBILITY (MATERIALS TO AVOID): MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

Strong acids.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: None known

HAZARDOUS POLYMERIZATION: None known.

*****SECTION VI-HEALTH HAZARD DATA*****

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Inhalation: Dizziness, breathing difficulty, headaches & loss of coordination.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Eye contact: Severe irritation, tearing, redness and blurred vision.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Skin contact: Can dry and defat skin causing cracks, irritation, and dermatitis.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Ingestion may cause local irritation of the mucous membranes of the mouth, esophagus and stomach. May act as a laxative.

HEALTH HAZARDS (ACUTE AND CHRONIC)

Inhalation-Dizziness, breathing difficulty, headaches, & loss of coordination. Eye contact-Severe irritation, tearing, redness, and blurred vision. Skin contact-Can dry and defat skin causing cracks, irritation, and dermatitis. Ingestion-Can cause gastrointestinal irritation, vomiting, nausea, & diarrhea

CARCINOGENICITY: NTP CARCINOGEN: No

IARC MONOGRAPHS: No

OSHA REGULATED: No

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Anesthesia, respiratory tract irritation, dermatitis, nausea, vomiting

EMERGENCY AND FIRST AID PROCEDURES

Inhalation overexposure-Move person to fresh air. If breathing stops, apply artificial respiration and seek immediate medical attention. Eye contact-flush with large quantities of water for 15 minutes. Skin contact-Wash thoroughly with soap and water and see a doctor. Ingestion-Do not induce vomiting, can cause chemical pneumonitis and pulmonary edema. Contact physician immediately.

*****SECTION VII-CONTROL MEASURES*****

RESPIRATORY PROTECTION

None normally required.

VENTILATION

General mechanical ventilation or local exhaust should be suitable to keep vapor concentrations below TLV. Ventilation equip. must be explosion proof.



11



MATERIAL SAFETY DATA SHEET

Date Printed: 11/20/2007

Page:



PROTECTIVE GLOVES

Protective gloves should be worn for prolonged or repeated contact.

EYE PROTECTION

Eye protection should be worn for the handling of any chemical materials.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Use impermeable aprons and protective clothing whenever possible to prevent skin contact. The use of head caps whenever possible is strongly recommended.

WORK/HYGIENIC PRACTICES

Eye washes and safety showers in the workplace are recommended.

*****SECTION VIII-PRECAUTIONS FOR SAFE HANKLING AND USE*****

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

REMOVE ALL SOURCES OF IGNITION. ADD ABSORBENT MATERIALS TO LARGE SPILLS AND SCOOP INTO APPROVED DISPOSAL CONTAINERS. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. WIPE UP SMALL SPILLS AND PLACE WIPERS IN AN APPROVED DISPOSAL CONTAINER. WASH OR STEAM CLEAN THE AREA OF THE SPILL.

WASTE DISPOSAL METHOD

Collect absorbent/water/spilled liquid mixture into metal containers and add enough water to cover. Consult local, state & federal hazardous waste regulat'n before disposing into approved hazardous waste landfills. Obey relevant laws.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

STORAGE TEMPERATURE: Ambient

STORAGE PRESSURE: Atmospheric

OTHER PRECAUTIONS

Smoking in area where this material is used should be strictly prohibited. Tools used with this material should be made from aluminum, brass or copper. Plastic utensils should not be used. NOTE: This information is accurate to the best knowledge of International Paper Food Service Business, but is furnished without any expressed or implied warranties.

*****SECTION IX-HAPS INFORMATION*****

% HAPS: .02

*****HAPS ITEMS IN FORMULA*****

	CAS NUMBER	WEIGHT
> STYRENE	100-42-5	.01
> RESIDUAL	NOT REQUIRED	.01
> ETHYLENE GLYCOL	107-21-1	.00

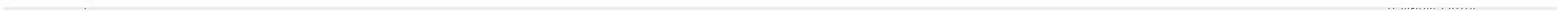
HAPS ITEMS LISTED ABOVE WITH NO WEIGHT, ARE WELL BELOW REPORTABLE REQUIREMENTS

*****SECTION X-DISCLAIMER*****

This information is furnished without warranty, representation, or license of any kind, except that it is accurate to the best of International Paper Company's knowledge or obtained from sources believed by the International Paper Company to be accurate. The International Paper Company does not assume any legal responsibility for use or reliance upon same. Customers are encouraged to conduct their own tests.

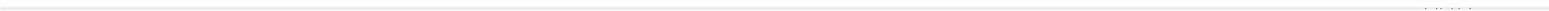


12





11



M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 9/29/2008

Page:



STABILITY: STABLE

CONDITIONS TO AVOID: Excessive heat, poor ventilation, corrosive atmospheres, excessive aging.

INCOMPATIBILITY (MATERIALS TO AVOID): MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

Strong acids.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: None known

HAZARDOUS POLYMERIZATION: None known.

*****SECTION VI-HEALTH HAZARD DATA*****

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Inhalation: Dizziness, breathing difficulty, headaches & loss of coordination.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Eye contact: Severe irritation, tearing, redness and blurred vision.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Skin contact: Can dry and defat skin causing cracks, irritation, and dermatitis.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Ingestion may cause local irritation of the mucous membranes of the mouth, esophagus and stomach. May act as a laxative.

HEALTH HAZARDS (ACUTE AND CHRONIC)

Inhalation-Dizziness, breathing difficulty, headaches, & loss of coordination. Eye contact-Severe irritation, tearing, redness, and blurred vision. Skin contact-Can dry and defat skin causing cracks, irritation, and dermatitis. Ingestion-Can cause gastrointestinal irritation, vomiting, nausea, & diarrhea

CARCINOGENICITY: NTP CARCINOGEN: No

IARC MONOGRAPHS: No

OSHA REGULATED: No

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Anesthesia, respiratory tract irritation, dermatitis, nausea, vomiting

EMERGENCY AND FIRST AID PROCEDURES

Inhalation overexposure-Move person to fresh air. If breathing stops, apply artificial respiration and seek immediate medical attention. Eye contact-flush with large quantities of water for 15 minutes. Skin contact-Wash thoroughly with soap and water and see a doctor. Ingestion-Do not induce vomiting, can cause chemical pneumonitis and pulmonary edema. Contact physician immediately.

*****SECTION VII-CONTROL MEASURES*****

RESPIRATORY PROTECTION

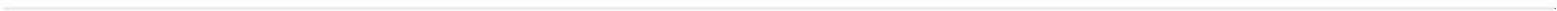
None normally required.

VENTILATION

General mechanical ventilation or local exhaust should be suitable to keep vapor concentrations below TLV. Ventilation equip. must be explosion proof.



10



M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 9/29/2008

Page:



PROTECTIVE GLOVES

Protective gloves should be worn for prolonged or repeated contact.

EYE PROTECTION

Eye protection should be worn for the handling of any chemical materials.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Use impermeable aprons and protective clothing whenever possible to prevent skin contact. The use of head caps whenever possible is strongly recommended.

WORK/HYGIENIC PRACTICES

Eye washes and safety showers in the workplace are recommended.

*****SECTION VIII-PRECAUTIONS FOR SAFE HANKLING AND USE*****

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

REMOVE ALL SOURCES OF IGNITION. ADD ABSORBENT MATERIALS TO LARGE SPILLS AND SCOOP INTO APPROVED DISPOSAL CONTAINERS. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. WIPE UP SMALL SPILLS AND PLACE WIPERS IN AN APPROVED DISPOSAL CONTAINER. WASH OR STEAM CLEAN THE AREA OF THE SPILL.

WASTE DISPOSAL METHOD

Collect absorbent/water/spilled liquid mixture into metal containers and add enough water to cover. Consult local, state & federal hazardous waste regulat'n before disposing into approved hazardous waste landfills. Obey relevant laws.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

STORAGE TEMPERATURE: Ambient
STORAGE PRESSURE: Atmospheric

OTHER PRECAUTIONS

Smoking in area where this material is used should be strictly prohibited. Tools used with this material should be made from aluminum, brass or copper. Plastic utensils should not be used. NOTE: This information is accurate to the best knowledge of International Paper Food Service Business, but is furnished without any expressed or implied warranties.

*****SECTION IX-HAPS INFORMATION*****

% HAPS: .03

Table with 3 columns: HAPS ITEMS IN FORMULA, CAS NUMBER, WEIGHT. Rows include STYRENE, RESIDUAL, ACRYLIC ACID, ETHYLENE GLYCOL.

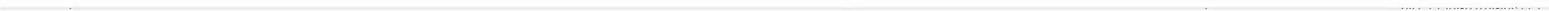
HAPS ITEMS LISTED ABOVE WITH NO WEIGHT, ARE WELL BELOW REPORTABLE REQUIREMENTS

*****SECTION X-DISCLAIMER*****

This information is furnished without warranty, representation, or license of any kind, except that it is accurate to the best of International Paper Company's knowledge or obtained from sources believed by the International Paper Company to be accurate. The International Paper Company does not assume any legal responsibility for use or reliance upon same. Customers are encouraged to conduct their own tests.



10



1



M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 6/26/2008

Page:



618

PRODUCT NAME: ECO CORR 9, GCMI 39 BLUE
 PRODUCT CODE: EC9 39 5

HMIS CODES: HFRP
 1 0 0

*****SECTION 1-MANUFACTURER IDENTIFICATION*****

MANUFACTURER'S NAME: OPTIHUE INKS
 ADDRESS: 808 FONTAINE
 KENTON, OHIO 43326

MSDS REVISION DATE: 10/22/07

EMERGENCY PHONE: 1-419-673-0711
 INFORMATION PHONE: 1-800-422-4657

NAME OF PREPARER: Bill Dewulf

*****HAZARDOUS INGREDIENTS/SARA 111 INFORMATION*****

REPORTABLE COMPONENTS	CAS NUMBER	WEIGHT PERCENT
* AMMONIUM HYDROXIDE AMMONIA 21 DEGREE-OHSA PEL STEL *35ppm, AGGIH TLV *25 ppm, STEL *35 ppm	1336-21-6	0 TO 5 PERCENT
* STYRENE	100-42-5	0 TO 5 PERCENT

* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.
 + Indicates chemicals listed under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65).

!!!NOTE: Not all items listed above are hazardous.

NO KNOWN CANCER EFFECTS

*****SECTION III-PHYSICAL/CHEMICAL CHARACTERISTICS*****

BOILING RANGE: 173-220F
 VAPOR DENSITY: Heavier than air
 VOC PERCENT: .28
 SOLUBILITY IN WATER: Miscible
 VISCOSITY: 30 TO 35 ZAHN 2.

WEIGHT PER GALLON: 10.541141 lb/gal
 EVAPORATION RATE: SLOWER THAN ETHER
 VOLATILE WT%: 47.3
 APPEARANCE AND ODOR: BLUE VISCOUS LIQUID, AMMONIACAL ODOR
 PH: pH: 8.9 TO 9.5

*****SECTION IV-FIRE AND EXPLSION HAZARD DATA*****

FLASH POINT: Greater than 200F
 METHOD USED: CALCULATED

EXTINGUISHING MEDIA: ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, OTHER

SPECIAL FIREFIGHTING PROCEDURES:
 Respiratory equipment should be worn to avoid inhalation of concentrated vapors. Water should not be used except as fog to keep nearby containers cool.

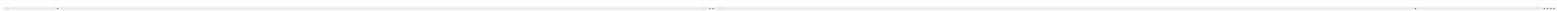
UNUSUAL FIRE AND EXPLOSION HAZARDS:
 AS WITH ANY BURNING ORGANIC MATERIAL SMOKE, FUMES AND OXIDES OF CARBON, MAY BE PRODUCED.

JUN 27 2008

*****SECTION V-REACTIVITY DATA*****



11



M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 6/26/2008

Page :



STABILITY: STABLE

CONDITIONS TO AVOID: Excessive heat, poor ventilation, corrosive atmospheres, excessive aging.

INCOMPATIBILITY (MATERIALS TO AVOID): MATERIALS AND CONDITIONS TO AVOID:
Strong oxidizing agents
Strong acids.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: None known

HAZARDOUS POLYMERIZATION: None known.

*****SECTION VI-HEALTH HAZARD DATA*****

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Inhalation: Dizziness, breathing difficulty, headaches & loss of coordination.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Eye contact: Severe irritation, tearing, redness and blurred vision.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Skin contact: Can dry and defat skin causing cracks, irritation, and dermatitis.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE

Ingestion may cause local irritation of the mucous membranes of the mouth, esophagus and stomach. May act as a laxative.

HEALTH HAZARDS (ACUTE AND CHRONIC)

Inhalation-Dizziness, breathing difficulty, headaches, & loss of coordination. Eye contact-Severe irritation, tearing, redness, and blurred vision. Skin contact-Can dry and defat skin causing cracks, irritation, and dermatitis. Ingestion-Can cause gastrointestinal irritation, vomiting, nausea, & diarrhea

CARCINOGENICITY: NTP CARCINOGEN: No

IARC MONOGRAPHS: No

OSHA REGULATED: No

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Anesthesia, respiratory tract irritation, dermatitis, nausea, vomiting

EMERGENCY AND FIRST AID PROCEDURES

Inhalation overexposure-Move person to fresh air. If breathing stops, apply artificial respiration and seek immediate medical attention. Eye contact-flush with large quantities of water for 15 minutes. Skin contact-Wash thoroughly with soap and water and see a doctor. Ingestion-Do not induce vomiting, can cause chemical pneumonitis and pulmonary edema. Contact physician immediately.

*****SECTION VII-CONTROL MEASURES*****

RESPIRATORY PROTECTION

None normally required.

VENTILATION

General mechanical ventilation or local exhaust should be suitable to keep vapor concentrations below TLV. Ventilation equip. must be explosion proof.

PROTECTIVE GLOVES



M A T E R I A L S A F E T Y D A T A S H E E T

Date Printed: 6/26/2008

Page:



Protective gloves should be worn for prolonged or repeated contact.

EYE PROTECTION

Eye protection should be worn for the handling of any chemical materials.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Use impermeable aprons and protective clothing whenever possible to prevent skin contact. The use of head caps whenever possible is strongly recommended.

WORK/HYGIENIC PRACTICES

Eye washes and safety showers in the workplace are recommended.

*****SECTION VIII-PRECAUTIONS FOR SAFE HANKLING AND USE*****

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

REMOVE ALL SOURCES OF IGNITION. ADD ABSORBENT MATERIALS TO LARGE SPILLS AND SCOOP INTO APPROVED DISPOSAL CONTAINERS. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. WIPE UP SMALL SPILLS AND PLACE WIPERS IN AN APPROVED DISPOSAL CONTAINER. WASH OR STEAM CLEAN THE AREA OF THE SPILL.

WASTE DISPOSAL METHOD

Collect absorbent/water/spilled liquid mixture into metal containers and add enough water to cover. Consult local, state & federal hazardous waste regulat'n before disposing into approved hazardous waste landfills. Obey relevant laws.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

STORAGE TEMPERATURE: Ambient
STORAGE PRESSURE: Atmospheric

OTHER PRECAUTIONS

Smoking in area where this material is used should be strictly prohibited. Tools used with this material should be made from aluminum, brass or copper. Plastic utensils should not be used. NOTE: This information is accurate to the best knowledge of International Paper Food Service Business, but is furnished without any expressed or implied warranties.

*****SECTION IX-HAPS INFORMATION*****

% HAPS: .02

*****HAPS ITEMS IN FORMULA*****

Table with 3 columns: Item Name, CAS NUMBER, WEIGHT. Rows include RESIDUAL, STYRENE, and ETHYLENE GLYCOL.

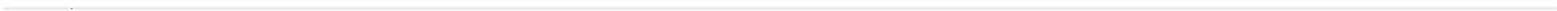
HAPS ITEMS LISTED ABOVE WITH NO WEIGHT, ARE WELL BELOW REPORTABLE REQUIREMENTS

*****SECTION X-DISCLAIMER*****

This information is furnished without warranty, representation, or license of any kind, except that it is accurate to the best of International Paper Company's knowledge or obtained from sources believed by the International Paper Company to be accurate. The International Paper Company does not assume any legal responsibility for use or reliance upon same. Customers are encouraged to conduct their own tests.



11



986

Material Safety Data Sheet

1. Product and company identification

Product code : PMPPP5GT0388/K507
Product name : GCM1 388 BLUE
Material uses : Printing.
Manufacturer : Sun Chemical Corporation
631 Central Avenue
Carlstadt, NJ 07072
In case of emergency : (800) 424-9300 (U.S.)
(703) 527-3887 (International)
Regulatory information : Canada: (905) 796-2222
US: (201) 933-4500
Other information : (513) 830-8500
Date of revision : 6/2/2008.

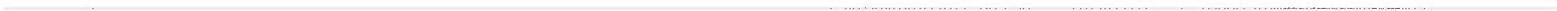
2. Hazards identification

Physical state : Liquid.
Color : Blue.
OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Emergency overview : No known significant effects or critical hazards.
Not applicable.
Routes of entry : Dermal contact. Inhalation.
Potential acute health effects
Eyes : May cause mild eye irritation.
Skin : May cause mild skin irritation.
Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion : No known significant effects or critical hazards.
Carcinogenic effects : No known significant effects or critical hazards.
Mutagenic effects : No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.
See toxicological information (section 11)

JUN 30 2008



1



3. Composition/information on ingredients

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting, in accordance with local regulations.

4. First aid measures

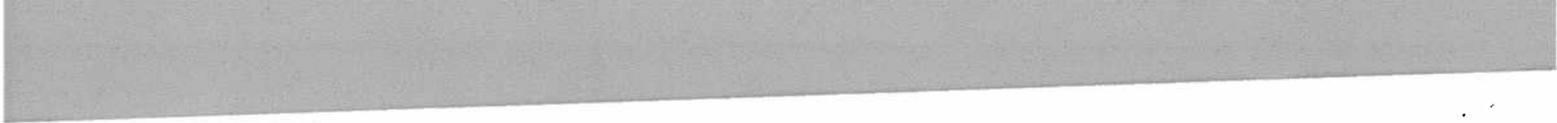
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if symptoms occur. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if symptoms occur. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

5. Fire-fighting measures

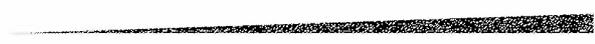
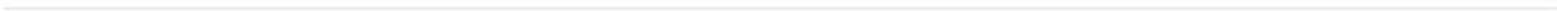
- Flammability of the product** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Products of combustion** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
metal oxide/oxides
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Flammability (OSHA criteria)** : IIIB
- Flash point** : Lowest known value: >93.3°C (200°F) (Closed cup)

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).



11



6. Accidental release measures

- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

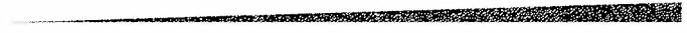
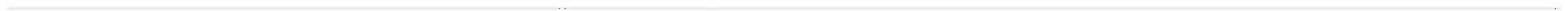
8. Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.



11



9 . Physical and chemical properties

Physical state	: Liquid.
Color	: Blue.
Boiling/condensation point	: Lowest known value: 100°C (212°F)
Melting/freezing point	: May start to solidify at the following temperature: 0°C (32°F) This is based on data for the following ingredient: Water.
Flash point	: Lowest known value: >93.3°C (200°F) (Closed cup)
VOC	: 0.83%
Density	: 1.327 g/cm ³ (11.0742 lbs/gal)
Evaporation rate	: <1 (Water) compared with Butyl acetate.

10 . Stability and reactivity

Stability and reactivity	: The product is stable.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Reactivity - Light	: May polymerize on exposure to light.

11 . Toxicological information

Acute toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Chronic toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

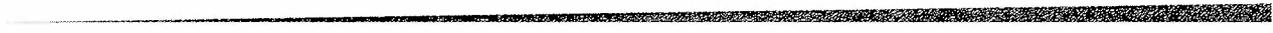
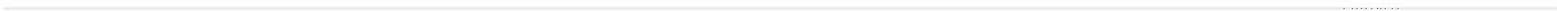
Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Refer to protective measures listed in sections 7 and 8.
Empty containers or liners may retain some product residues.



14 . Transport information

Not regulated.

15 . Regulatory information

HCS Classification : Not regulated.
TSCA 8(b) inventory : Listed
U.S. Federal regulations : TSCA 4(a) dioxins/furanes testing: No products were found.
 TSCA 4(a) final testing order: No products were found.
 TSCA 4(a) final test rules: No products were found.
 TSCA 4(a) ITC priority list: No products were found.
 TSCA 4(a) proposed test rules: No products were found.
 TSCA 5(a)2 final significant rules: No products were found.
 TSCA 5(a)2 proposed significant rules: Butyl Acrylate
 TSCA 5(e) substance consent order: No products were found.
 TSCA 6 final risk management: No products were found.
 TSCA 6 proposed risk management: No products were found.
 TSCA 8(a) CAIR: No products were found.
 TSCA 8(a) chemical risk rules: No products were found.
 TSCA 8(a) dioxin/furan precursor: No products were found.
 TSCA 8(a) IUR: No products were found.
 TSCA 8(a) PAIR: Dimethylpolysiloxane; Dimethyl Polysiloxane; Polyoxyethylene Nonyl Phenol; proprietary; Diethylene Glycol Ethyl Ether Acetate
 TSCA 8(c) calls for record of SAR: No products were found.
 TSCA 8(d) H and S data reporting: Butyl Acrylate: 1994
 TSCA 12(b) annual export notification: No products were found.
 TSCA 12(b) one-time export: No products were found.
 TSCA precursor chemical list: No products were found.
 TSCA commerce control list: No products were found.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: C.I. Pigment White 18; Titanium Dioxide; Paraffin Wax
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: C.I. Pigment White 18: Immediate (acute) health hazard; Titanium Dioxide: Immediate (acute) health hazard; Paraffin Wax: Immediate (acute) health hazard
Clean Water Act (CWA) 307: C.I. Pigment Blue 15
Clean Water Act (CWA) 311: Sodium Hydroxide; Styrene Monomer; Methyl Methacrylate; Ammonia; ammonia
Clean Air Act (CAA) 112 accidental release prevention: Ammonia
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: Ammonia

SARA 313

: None identified.

CONEG

: In compliance.

:

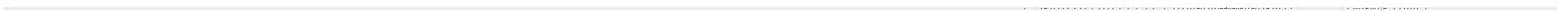
International lists

International lists

: **Australia inventory (AICS)**: At least one component is not listed.
 : **China inventory (IECSC)**: At least one component is not listed.
 : **Korea inventory (KECI)**: At least one component is not listed.
 : **Philippines inventory (PICCS)**: At least one component is not listed.
 : **Japan inventory (ENCS)**: At least one component is not listed.



1



15 . Regulatory information

Canada inventory: All components are listed or exempted.

Europe inventory: Not determined.

New Zealand Inventory (HASNO) : Not listed.

16 . Other information

Label requirements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

Hazardous Material Information System (U.S.A.) :

Health	1
Fire hazard	1
Reactivity	0
Personal protection	

Version : 1.01

Notice to reader

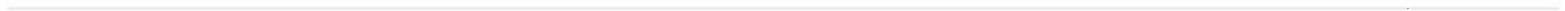
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



VOLATILE COMPONENT INFORMATION

	US EPA Designate
A. Product Density:	
1.) 1.327 g/cm ³ (11.0742 lbs/gal)	=(Dc)s
B. Nonvolatile Content:	
1.) 53.71 Weight percent of nonvolatiles in product	=(Wn)s
2.) 40.24 Volume percent of nonvolatiles in product	=(Vn)s
3.) 14.77 Density, lb nonvolatiles/gal nonvolatiles	=(Dn)s
C. Volatiles:	
1.) 46.29 Weight percent of total volatiles in product	=(Wv)s
2.) 8.57 Density, lb volatiles/gal volatiles	=(Dv)s
D. Water Content:	
1.) 45.45 Weight percent of water in product	=(Ww)s
2.) 60.35 Volume percent of water in product	=(Vw)s
E. Volatile Organic Compounds, (VOCs):	
1.) 0.83 Weight percent of organic volatiles in product	=(Wo)s
2.) 1.1 Volume percent of organic volatiles in product	=(Vo)s
3.) 8.34 Density, lb organic volatiles/gal organic volatiles	=(Do)s
4.) 1.79 Weight percent of VOCs in total volatiles	=(Wo)v
5.) 1.84 Volume percent of VOCs in total volatiles	=(Vo)v
F. VOC Content in Product Expressed in Other Terms:	
1.) a.) 0.09 lb VOC / gal Product	
1.) b.) 11.01 grams VOC / liter Product	
2.) a.) 0.23 lb VOC / gal Product less water & exempt solvent	
2.) b.) 27.22 grams VOC / liter Product less water & exempt solvent	
3.) 0.23 lb VOC / gal total nonvolatiles	
G. Volatiles (all VOCs, HAPs, water & ammonia)	
Ingredient	CAS number % by weight Density (lb/gal)



Ingredient	CAS number	% by weight	Density (lb/gal)
Hazardous Air Pollutants VOCs (HAPs)		0.04	
Acrylic Acid	79-10-7	0.03	8.75
Styrene Monomer	100-42-5	0.01	7.91
Other VOCs (Non-HAPs)			
Monoethanolamine	141-43-5	0.75	8.48
Non HAP/Non SARA Organic Volatiles		0.03	7.18
Water	7732-18-5	45.45	8.34
Ammonia	7664-41-7	0.01	5.99

NOTE: The term Volatile Organic Compounds (VOC) refers only to volatile organic materials as defined by the US EPA and does not include water, ammonia, acetone or other exempt solvents. Unless otherwise stated, the VOC values reported above are based on materials of construction.



11



MATERIAL SAFETY DATA SHEET

Sun Chemical Corporation
1357 SEABOARD IND BLVD NW
ATLANTA, GA 30318

816

MSDS Distribution: (404) 355-4131
Regulatory Information: (201) 933-4500
Emergency Call Chemtrec: (800) 424-9300 US
Outside US (703) 527-3887
Medical Emergency: (201) 804-8228

1. PRODUCT IDENTIFICATION

Product Name	AAPP4591889
Product Description	ADVANTAGE STAPLES RED
Product Category	Flexo Ink
MSDS Identification No.	000001029077
MSDS Date	02/04/06

2. COMPOSITION (Hazardous Components)

This product does not contain any hazardous ingredients required to be listed under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

3. PRODUCT HAZARDS IDENTIFICATION

Potential Health Effects

Dermal contact is expected to be the primary route of occupational exposure. The following statements are based upon an assessment of the health effects associated with the components present in this product mixture.

Eye

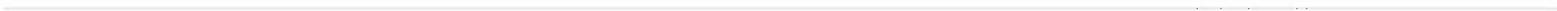
This product may cause mild transient eye irritation. Direct contact may cause redness, tearing and stinging.

Skin

Brief contact with this product should not result in skin irritation. Prolonged or repeated exposure may remove the skin's natural oils resulting in redness, itching and drying of the skin.



11



Inhalation

This product is not expected to cause respiratory tract irritation under conditions of intended use.

Ingestion

Ingestion of amounts incidental to normal industrial handling are unlikely to cause adverse health effects. Deliberate ingestion of excessive quantities may result in gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects

No chronic health hazards are associated with the components present in this product.

Medical Conditions Aggravated by Exposure

Preexisting skin disorders may be aggravated by exposure to this product.

4. FIRST AID MEASURES

Eye Contact

In case of direct contact, flush eyes with clean water for at least 15 minutes. Seek medical attention if irritation or redness develops and persists.

Skin Contact

Remove contaminated clothing. Wash affected area thoroughly with soap and water. Seek medical attention if irritation or redness develops and persists.

Inhalation

If breathing difficulties develop, remove affected person away from source of exposure into fresh air. Seek medical attention.

Ingestion

Ingestion is an unlikely route of exposure under normal industrial conditions. However, if appreciable quantities of this product are accidentally swallowed, seek immediate medical attention.

5. FIRE FIGHTING MEASURES

Flash Point (degree F)

Not Applicable

Flash Point Category (OSHA/NFPA)

Not Applicable

Lower Flammability Limit in Air (% by Vol)

Not Determined

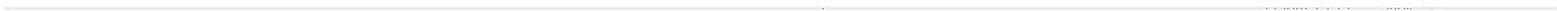
NOTE : Flash point value/category has been derived from testing of products of similar composition.

Extinguishing Media

This material is a water-based product and as supplied is not expected to burn. The residual material and/or product container may support combustion. If this should occur, use water, multipurpose foam, dry chemical or carbon dioxide.



10



Fire Fighting Instructions

The use of self-contained breathing apparatus is recommended for firefighters. Water spray may be used to cool containers exposed to heat near flame.

Fire and Explosion Hazards

No unusual fire or explosion hazards are anticipated.

6. ACCIDENTAL RELEASE MEASURES

Keep unnecessary personnel away from spill area. Ventilate area of spill; use appropriate personal protective equipment.

For large spills, contain the spill by diking with sand or other inert material. Keep out of drains, sewers or waterways. Transfer product to suitable containers for recovery or disposal. If necessary, follow emergency response procedures.

For small spills, use an inert absorbent material. Water may be used to clean the area of the spill.

7. HANDLING AND STORAGE

Keep containers tightly closed. Keep containers cool and dry. Protect from freezing. Use and store this product with adequate ventilation. Use appropriate protective equipment when handling this product and maintain good personal hygiene practices.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

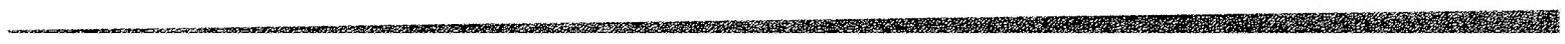
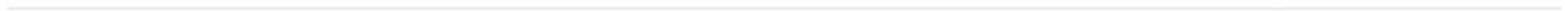
Provide adequate general (dilution) and/or local exhaust ventilation. It is suggested that a source of clean water be made available in work area for flushing eyes and skin.

Personal Protective Equipment**Eye / Face Protection**

The use of chemical splash goggles or safety glasses is recommended to prevent eye contact.

Skin Protection

The use of impermeable, solvent resistant gloves is advised to prevent skin contact. Use chemical resistant apron if splash hazard exists.



Respiratory Protection

Respiratory protection is typically not required under conditions of normal use. However, unusually high concentrations of vapor may require respiratory protection.

Established Exposure Guidelines

No ACGIH or OSHA exposure guidelines have been established for any of the components in this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point / Range (degree F)	212 F
Typical Density (lbs/gal)	9.98
Vapor Density (excluding water) vs. Air	Not Applicable
Evaporation Rate (vs. Butyl Acetate)	Slower
Appearance	Red Viscous Liquid
Volatile Organic Compounds (wt%)	0.81

10. STABILITY AND REACTIVITY**Stability**

Stable. Hazardous polymerization will not occur.

Conditions to Avoid

None anticipated.

Incompatibility

This product is incompatible with strong acids or bases and oxidizing agents.

Hazardous Decomposition Products

By high heat and fire: carbon dioxide, carbon monoxide and/or oxides of nitrogen and sulfur.

11. TOXICOLOGY OF COMPONENTS

Toxicological information is presented only for the hazardous components identified in Section 2 of the MSDS.



11



12. DISPOSAL CONSIDERATIONS

Waste water discharge and all other waste disposal must meet federal, state, municipal, and local regulations.

Emptied containers may retain product residues, all precautions given in this data sheet should be observed.

13. REGULATORY INFORMATION**Toxic Substances Control Act (TSCA)**

The chemical components of this product are listed or have been registered for inclusion on the Section 8(B) Chemical Substance Inventory List (40 CFR 710).

EPCRA Section 313 Supplier Notification

This product does not contain any substances in quantities which must be reported under the supplier notification requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

Clean Air Act Amendment (HAPs)

This product does not contain any substances which are defined as Hazardous Air Pollutants under Title III of the Clean Air Act Amendments of 1990.

Clean Air Act Amendment (ODC's)

This product does not contain and is not manufactured with any of the ozone depleting chemicals listed under Section 602 of the Clean Air Amendments of 1990.

California Proposition 65

This product does not contain any chemicals which are defined by the state of California to cause cancer and/or reproductive toxicity.

CONEG

This product is certified to be in full compliance with CONEG Model Toxics Legislation for packaging and packaging components.

OSHA Hazard Communication Label for Product

THIS PRODUCT DOES NOT CONTAIN ANY HAZARDOUS COMPONENTS AS DEFINED BY OSHA, 29 CFR 1910.1200

UPON LOSS OF WATER, PRODUCT RESIDUE MAY SUPPORT COMBUSTION
Please refer to the MSDS for more details.

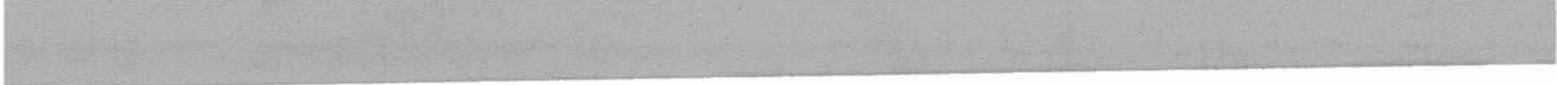
Keep away from heat and flame.

Keep containers closed.

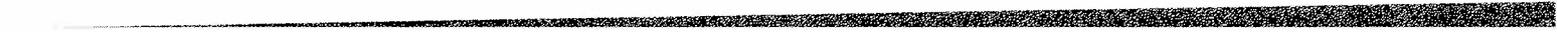
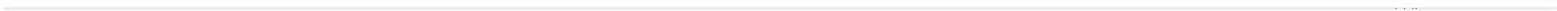
Use with adequate ventilation.

Avoid contact with eyes, skin and clothing.

Use appropriate personal protective equipment.



1



Wash thoroughly after handling.

FIRST AID : In case of contact, flush eyes or skin with plenty of water.

Remove contaminated clothing. Seek medical attention if irritation develops or persists. If inhaled, remove to fresh air. Seek medical attention if breathing difficulties develop.

IN CASE OF FIRE, use water, multipurpose foam, dry chemical or carbon dioxide.

Empty containers may retain product residues, all hazard precautions given on this label should be observed.

DO NOT REMOVE THIS LABEL.

14. ADDITIONAL COMMENTS

Hazardous Materials Information System (HMIS)

Health 1

Flammability 0

Reactivity 0

NOTICE : These ratings are intended only for the immediate and general identification of acute hazards. Sun Chemical is providing this information on a voluntary basis as a guide for our customers. The use and interpretation of this information may vary from company to company. All information contained in this data sheet should be considered in order to adequately deal with the safe handling of this material.

Revision Date

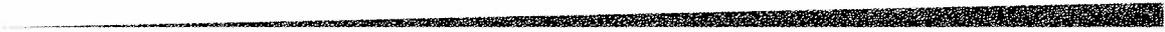
02/04/06

The information presented in this data sheet represents a compilation of information generated from our suppliers and other recognized sources of scientific evidence and chemical information. To the best of our knowledge and belief, it is accurate and reliable as of the date of issue. However, no warranty, express or implied, including any warranty of merchantability, fitness for any use, or any other guarantee is offered or implied regarding the accuracy of such data, the results to be obtained from the use thereof, the safety of this product, or the hazards connected with the use of this material. Since the conditions of handling and use of this material are beyond our control, Sun Chemical shall assume no liability for damages incurred by the use of the material. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability and completeness of this information, the safety measures necessary to handle this product, and the actions needed to comply with all applicable Federal, State, and Local Legislation.

000001274744/AAPPP4591889/001/001/71/39581014 / 0.00000/ 9.99/999.9// .81/1/0/0)



1



VOLATILE COMPONENT INFORMATION

US EPA
Designate

A. Product Density:

- 1.) 9.98 LB Product /gal Product

=(Dc)s

B. Nonvolatile Content:

- 1.) 51.41 Weight percent of nonvolatiles in product
2.) 41.82 Volume percent of nonvolatiles in product
3.) 12.28 Density, lb nonvolatiles/gal nonvolatiles

=(Wn)s

=(Vn)s

=(Dn)s

C. Volatiles:

- 1.) 48.59 Weight percent of total volatiles in product
2.) 8.33 Density, lb volatiles/gal volatiles

=(Wv)s

=(Dv)s

D. Water Content:

- 1.) 47.57 Weight percent of water in product
2.) 56.98 Volume percent of water in product

=(Ww)s

=(Vw)s

E. Organic Volatiles, (VOCs):

- 1.) 0.81 Weight percent of organic volatiles in product
2.) 0.94 Volume percent of organic volatiles in product
3.) 8.56 Density, lb organic volatiles /gal organic volatiles
4.) 1.67 Weight percent of VOCs in total volatiles
5.) 1.62 Volume percent of VOCs in total volatiles

=(Wo)s

=(Vo)s

=(Do)s

=(Wo)v

=(Vo)v

F. VOC Content in Product Expressed in Other Terms:

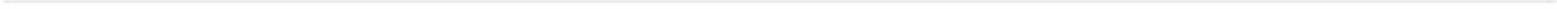
- 1.) a.) 0.08 lb VOC / gal Product
1.) b.) 9.67 grams VOC / liter Product
2.) a.) 0.19 lb VOC / gal Product less water & exempt solvent
2.) b.) 22.43 grams VOC / liter Product less water & exempt solvent
3.) 0.19 lb VOC / gal total nonvolatiles

G. Volatiles: (all VOCs, HAPs, water & ammonia)

Ingredient	CAS Number	Weight Percent	Density (lb/gal)
Monoethanolamine	141-43-5	0.78	8.51
Non HAP/SARA Organic Volatiles		0.03	7.75
Water	7732-18-5	47.57	8.34
Ammonia	7664-41-7	0.21	5.99



11



NOTE : The term Volatile Organic Compounds (VOC) refers only to volatile organic materials as defined by the US EPA and does not include water, ammonia, acetone or other exempt solvents. Unless otherwise stated, the VOC values reported above are based on materials of construction.



10/10/10

