



SAFETY DATA SHEET

Targa Downstream LLC

Date Issued: 03/23/2015

SDS No: TRG201-022

Date Revised: 02/19/2020

Revision No: 1

Propane, Commercial (Odorized)

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Propane, Commercial (Odorized)

DISTRIBUTOR

Targa Downstream LLC
811 Louisiana, Suite 2100
Houston, TX 77002

24 HR. EMERGENCY TELEPHONE NUMBERS

HEALTH (24 hr): (800) 451-8346

TRANSPORTATION (24 hr):

CHEMTREC EMERGENCY NUMBER (24 hr):

(800) 424-9300 or (202) 483-7616

PRODUCT INFORMATION: (713) 584-1186

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Health:

Simple Asphyxiant

Physical:

Flammable Gases, Category 1

Gases Under Pressure, Liquefied Gas

GHS LABEL



Flame



Gas
Cylinder

SIGNAL WORD: DANGER

HAZARD STATEMENTS

H000: May displace oxygen and cause rapid suffocation.

H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

PRECAUTIONARY STATEMENT(S)

Prevention:

P210: Keep away from heat/sparks/open flames/hot surfaces – no smoking.

Response:

P307+P311: IF exposed: Call a POISON CENTER or doctor/physician.

P377: Leaking gas fire: Do not extinguish unless leak can be stopped safely.

P381: Eliminate all ignition sources if safe to do so.

Storage:

P403: Store in a well-ventilated place.

P410+P403: Protect from sunlight. Store in a well-ventilated place.

Disposal:

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Colorless gas or liquid.

POTENTIAL HEALTH EFFECTS

EYES: The gas phase of this product is not expected to cause eye irritation. However, direct contact with liquefied gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation. This hazard evaluation is based on the data from similar materials.

SKIN: The gas phase of this product is not expected to cause skin irritation. However, direct contact with liquefied gas may cause burns, severe injury, and/or frostbite. The systemic toxicity of this substance has not been determined. However, it is anticipated to be practically non-toxic to internal organs if it gets on the skin. This hazard evaluation is based on data from similar materials.

INGESTION: This product is a compressed gas; hence oral exposure and resulting acute toxicity are unlikely.

INHALATION: Inhalation may be irritating if inhaled at high concentrations. Vapors may cause dizziness or asphyxiation without warning.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: Not Established.

TERATOGENIC EFFECTS: Not Established.

CARCINOGENICITY: This product may contain a component that is listed by IARC as "carcinogenic to humans". Refer to Section 11 of this SDS for additional information.

MUTAGENICITY: Not Established.

ROUTES OF ENTRY: Eye contact, inhalation, skin contact.

TARGET ORGAN STATEMENT: Central nervous system (CNS).

SENSITIZATION: Not Established.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	%	CAS
Propane	> 25	74-98-6
Propylene	< 50	115-07-1
Ethane	< 25	74-84-0
Radon	Contains	10043-92-2
Ethyl Mercaptan	Contains	75-08-1

COMMENTS: This product is classified as a simple asphyxiant. When working with this material, the minimal oxygen content should be 18 percent by volume under normal atmospheric pressure.

4. FIRST AID MEASURES

EYES: Direct contact with liquefied gas may cause severe injury due to frostbite from rapid liquid evaporation. If eye tissue is frozen, seek medical attention immediately. If tissue is not frozen, thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists seek medical attention.

SKIN: Direct contact with liquefied gas may cause burns, severe injury and/or frostbite. In case of frostbite, immediately warm affected area with lukewarm water not to exceed 40°C (105°F) for at least 20 minutes. Obtain medical assistance. If no frostbite occurs, immediately remove contaminated clothing or shoes, wipe excess from skin and flush with plenty of water for at least 15 minutes. Do not reuse clothing until thoroughly cleaned. Get medical attention if irritation persists.

INGESTION: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

INHALATION: Move victim to fresh air. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get medical attention.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

INHALATION: Signs and symptoms of central nervous system effects may include rapid breathing, incoordination, rapid fatigue, excessive salivation, disorientation, headache, nausea, and vomiting. Convulsions, loss of consciousness, coma, and/or death may occur if exposure to high concentration continues.

NOTES TO PHYSICIAN: Treat symptomatically. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First Aid Responders are advised to wear personal protective equipment as found in Section 8 of this SDS.

5. FIRE FIGHTING MEASURES

GENERAL HAZARD: Do not extinguish a leaking gas fire unless leak can be stopped.

EXTINGUISHING MEDIA:

SMALL FIRE - Dry chemical, carbon dioxide, or Halon fire extinguisher.

LARGE FIRE - Water spray or fog.

EXPLOSION HAZARDS: Containers may explode when heated.

HAZARDOUS COMBUSTION PRODUCTS: Normal combustion forms carbon dioxide and water vapor; incomplete combustion can produce carbon monoxide.

FIRE FIGHTING PROCEDURES: PROTECTIVE ACTIONS TO TAKE DURING FIRE FIGHTING - This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) that can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices; icing may occur. Persons involved in firefighting response involving this product and its containers/packaging should refer to Section 8 of this SDS for the proper selection of exposure controls and personal protective equipment.

FIRE FIGHTING EQUIPMENT: PRECAUTIONS FOR FIRE INVOLVING TANKS OR CAR/TRAILER LOADS -

Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. Isolate for 1600 meters (1 mile) in all directions; also consider initial evacuation for 1600 meters (1 mile) in all directions. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

FIRE EXPLOSION: Extremely flammable liquefied gas. Gas may accumulate in confined areas, travel considerable distance to source of ignition and flash back causing fire or explosion. Vapors may form explosive mixtures with air.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: For emergency information and procedures to follow in the case of an accidental release, call the Emergency Telephone Number(s) listed in Section 1 of this SDS. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Allow to dissipate with adequate ventilation.

LARGE SPILL: Dike far ahead of liquid spill for later disposal. Consider initial downwind evacuation for at least 800 meters (1/2 mile). Do not release into sewers or waterways.

GENERAL PROCEDURES: MATERIALS & METHODS (EQUIPMENT & TECHNIQUES) FOR CONTAINMENT & CLEANUP - Call Emergency Telephone Number(s) provided in Section 1 of this SDS. Isolate area until gas has dispersed. Use clean non-sparking tools to collect absorbed material. Use water spray to reduce vapors or divert vapor cloud drift. Avoid water runoff to contact spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing indicated in Section 8 of this SDS.

RELEASE NOTES: ENVIRONMENTAL PRECAUTIONS - Avoid contact of spilled material with soil and prevent runoff from entering surface waterways. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

SPECIAL PROTECTIVE EQUIPMENT: EMERGENCY & NON-EMERGENCY RESPONDERS - Refer to Section 8 of this SDS for appropriate exposure controls and personal protective equipment (PPE).

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Handle in accordance with good industrial hygiene and safety practices. These practices include but are not limited to avoiding unnecessary exposure and prompt removal of material from eyes, skin and clothing. Do not breathe material. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. If needed, take first aid actions as indicated in Section 4 of this SDS.

HANDLING: Wear appropriate personal protective equipment and use exposure controls as indicated in Section 8 of this SDS. Keep away from heat and flame. Do not weld, heat or drill container. Remove contaminated clothing immediately. Do not wear contaminated clothing or shoes. Wash with soap and water after working with this product.

STORAGE: Keep in airtight container away from all heat sources. Store in a segregated and approved area. Store in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Keep container in a well-ventilated area. Store away from incompatible materials such as strong oxidizing materials. Store in the original container or an approved alternative made from compatible material. Do not store in unlabeled containers. Treat empty containers in a similar fashion as residual product may exist. Use appropriate containment to avoid environmental contamination. Before entry into confined spaces that may have contained hazardous material, determine concentrations and take appropriate measures for personal protection. Material presents a hazard that may require personal protective equipment for entry. CONTAINER UNDER PRESSURE.

STORAGE TEMPERATURE: Store containers in a room at ambient temperature.

STORAGE PRESSURE: Containers should be stored in a room at ambient pressure.

SPECIAL SENSITIVITY: This product has been odorized to aid in its detection in case of a leak or accidental discharge. During shipping or storage of an odorized material, alteration of the odorant and subsequent reduction in its effectiveness may occur. Odorants are reactive. Rust and scale in storage containers and pipes may significantly reduce an odorant's effectiveness. For this reason, storage containers must be free of rust and scale. Whenever an empty cylinder is filled, it must be properly purged and conditioned to remove air and water and to deactivate sites for oxidation of the odorant. Underground pipelines should also be checked periodically for leaks. Prolonged exposure to odorant or other strong smells in the environment may reduce an individual's ability to detect the odorant. People with an impaired ability to detect odors due to colds, allergies, smoking or injuries must be especially cautious.

COMMENTS: Special precautions should be taken when entering or handling equipment in this type of gas service because of possible radioactive contamination. All equipment should be checked for radioactivity or opened to the atmosphere and have forced ventilation applied at least four hours prior to entry or handling.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³
Propane	TWA	1000	1800	N/E	N/E
	STEL	N/E	N/E	N/E	N/E
Propylene	TWA	N/E	N/E	500	860
	STEL	N/E	N/E	N/E	N/E
Ethane	TWA	N/E	N/E	1000	1230
	STEL	N/E	N/E	N/E	N/E
Radon	TWA	N/E	N/E	N/E	N/E
	STEL	N/E	N/E	N/E	N/E
Ethyl Mercaptan	TWA	N/E	N/E	0.5	1.3
	STEL	C10 ^[1]	C25 ^[1]	N/E	N/E
Footnotes:					
1. C = Ceiling					

ENGINEERING CONTROLS: Provide adequate general and local exhaust ventilation to meet exposure limit requirements. Provide readily accessible eye wash stations and emergency showers. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Employees should be provided with and required to use safety goggles, chemical goggles and/or full-face splash shields where there is any possibility of product coming in contact with eyes. Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of contact lenses. Ensure that an eye wash station is operable and nearby.

SKIN: Any impervious glove including nitrile or neoprene gloves.

RESPIRATORY: A respirator is generally not required for use. However, depending on the airborne concentration, use a NIOSH-approved respirator that provides adequate protection from measured concentrations of this material if exposure is unknown or exceeds permissible limits. Use a positive pressure, air-supplying respirator if there is a potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

WORK HYGIENIC PRACTICES: Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and laundry before reuse. Shower after work using plenty of soap and water.

OTHER USE PRECAUTIONS: FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS - A self-contained breathing apparatus with full facepiece operated in a pressure-demand or other positive pressure mode is recommended for firefighting or other immediately dangerous to life and health conditions. Supplied-air respirator with full facepiece and operated in pressure-demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode may also be used.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Commercial natural gas. This product has been odorized in order to aid in its detection in case of a leak or accidental discharge. Prolonged exposure to an odorant or other strong smells may reduce an individual's ability to detect the odorant. People with an impaired ability to detect odors due to colds, allergies, smoking, or injuries must be especially cautious.

APPEARANCE: Colorless gas or liquid.

pH: Not Established.

PERCENT VOLATILE: 100

FLASH POINT: -104°C (-156°F)

FLAMMABLE LIMITS: 2.1 to 9.5

Notes: Flammable limits given as percentage volume in air at normal atmospheric temperature and pressure.

AUTOIGNITION TEMPERATURE: 450°C (842°F)

VAPOR PRESSURE: Not Established.

VAPOR DENSITY: Not Established.

BOILING POINT: Not Established.

FREEZING POINT: Not Established.

MELTING POINT: Not Established.

SOLUBILITY IN WATER: Soluble in alcohol, ether, and hydrocarbons. Insoluble in water.

EVAPORATION RATE: Not Established.

SPECIFIC GRAVITY: Not Established.

FLAMMABILITY - Refer to Section 2 and Section 5 of this SDS for classification and flammability characteristics.

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

STABILITY: This product is anticipated to be stable under normal ambient storage and handling conditions of temperature and pressure.

POLYMERIZATION: This product is not anticipated to cause hazardous reactions or polymerizations under normal ambient storage and handling conditions of temperature and pressure.

CONDITIONS TO AVOID: Avoid contact with heat, sparks, open flames and elevated temperatures.

HAZARDOUS DECOMPOSITION PRODUCTS: None Determined.

INCOMPATIBLE MATERIALS: Strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

11. TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
Propane	N/E	N/E	658 mg/L (4 hours)
Propylene	N/E	N/E	N/E
Ethane	N/E	N/E	> 800000 ppm (15 min)
Radon	N/E	N/E	N/E
Ethyl Mercaptan	517 to 900 mg/kg	> 2000 mg/kg	4299 to 4541 ppm (4 hours)

EYES: The gas phase of this product is not expected to cause eye irritation. Direct contact with liquefied gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation. This hazard evaluation is based on the data from similar materials.

SKIN EFFECTS: The gas phase of this product is not expected to cause skin irritation. Direct contact with liquefied gas may cause burns, severe injury, and/or frostbite. This hazard evaluation is based on the data from similar materials.

CARCINOGENICITY

Chemical Name	IARC Status
Propylene	3
Radon	1

IARC: Group 1: Carcinogenic to humans.

Group 3: Not classifiable as to carcinogenicity in humans.

NTP: Not Listed.

OSHA: Not Listed.

NOTES: Although radon is listed as "carcinogenic to humans", the radon levels in this product do not present any direct radon exposure hazard and this product is not considered carcinogenic.

SENSITIZATION: Not Established.

NEUROTOXICITY: Not Established.

GENETIC EFFECTS: Not Established.

REPRODUCTIVE EFFECTS: Not Established.

TERATOGENIC EFFECTS: Not Established.

MUTAGENICITY: Not Established.

GENERAL COMMENTS: This product may contain detectable but varying quantities of the naturally occurring radioactive substance radon 222. The amount in the gas itself is not hazardous, but since radon rapidly decays (1/2 life = 3.82 days) to form other radioactive elements including lead 210, polonium 210, and bismuth 210, equipment may be radioactive. The radon daughters are solids and therefore may attach to dust particles or form films and sludges in equipment. Inhalation, ingestion, or skin contact with radon daughters can lead to the deposition of radioactive material in the lungs, bone, blood-forming organs, intestinal tract, kidney, and colon. Occupational exposure to radon and radon daughters has been associated with an increased risk of lung cancer in underground uranium miners.

12. ECOLOGICAL INFORMATION

DISTRIBUTION: Do not discharge into or allow runoff to flow into sewers and natural waterways. Contain spill material and dike for proper disposal.

AQUATIC TOXICITY (ACUTE): This product is not expected to be harmful to aquatic life.

GENERAL COMMENTS: Any other adverse environmental effects, such as environmental fate (exposure), ozone depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and global warming potential are indicated in this section if data exists. Otherwise, this data has not been established.

13. DISPOSAL CONSIDERATIONS

RCRA/EPA WASTE INFORMATION: Under the U.S. Environmental Protection Agency's (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal whether the product meets RCRA criteria for a hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

SECTION COMMENTS: Dispose of material in accordance with national, state, regional, and local regulations. Never discharge directly into sewers or surface water. Consult with environmental regulatory agencies for guidance on acceptable disposal practices for the product, in any form, and its containers/packaging.

14. TRANSPORT INFORMATION**DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME: Liquefied petroleum gas.

PRIMARY HAZARD CLASS/DIVISION: 2.1

UN/NA NUMBER: 1075

NAERG: 115

LABEL: 2.1: Flammable Gas.

NOTES: The description shown may not apply to all shipping situations. Consult 49 CFR or the appropriate Dangerous Goods Regulations for additional requirements and mode-specific or quantity-specific shipping requirements.

ROAD AND RAIL (ADR/RID)

PROPER SHIPPING NAME: Liquefied petroleum gas.

UN NUMBER: 1075

PRIMARY HAZARD CLASS/DIVISION: 2.1 (forbidden on passenger rail)

Note: This product is not permitted for transport on passenger rail per 49 §173.27.

AIR (ICAO/IATA)

PROPER SHIPPING NAME: Liquefied petroleum gas.

UN NUMBER: 1075

PRIMARY HAZARD CLASS/DIVISION: 2.1 (forbidden on passenger aircraft)

Note: This product is not permitted for transport on passenger aircraft per 49 §173.27.

VESSEL (IMO/IMDG)

PROPER SHIPPING NAME: Liquefied petroleum gas.

UN NUMBER: 1075

PRIMARY HAZARD CLASS/DIVISION: 2.1

EmS: F-D, S-U

MARINE POLLUTANT: Not Listed.

LABEL: 2.1

15. REGULATORY INFORMATION**UNITED STATES****DOT LABEL SYMBOL AND HAZARD CLASSIFICATION**

Flammable

Gas

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**311/312 HAZARD CATEGORIES:** Fire hazard. Immediate (acute) health hazard. Sudden release of pressure.**FIRE:** Yes **PRESSURE GENERATING:** Yes **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** No**EPCRA SECTION 313 SUPPLIER NOTIFICATION**

Chemical Name	%	CAS
Propylene	< 50	115-07-1

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS
Propane	74-98-6
Propylene	115-07-1
Ethane	74-84-0
Ethyl Mercaptan	75-08-1

CLEAN AIR ACT

Chemical Name	%	CAS
Propane	> 25	74-98-6
Propylene	< 50	115-07-1
Ethane	< 25	74-84-0
Ethyl Mercaptan	Contains	75-08-1

STATES WITH SPECIAL REQUIREMENTS

Chemical Name	Requirements
Propane	Delaware Air Quality Management Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey RTK Hazardous Substance Pennsylvania Hazardous Substance Washington PELs for Air Contaminants
Propylene	California Hazardous Substance Delaware Air Quality Management Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey RTK Hazardous Substance Pennsylvania Hazardous Substance Washington PELs for Air Contaminants

Chemical Name	Requirements
Ethane	Delaware Air Quality Management Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New Jersey TCPA EHS Pennsylvania Hazardous Substance Washington PELs for Air Contaminants
Ethyl Mercaptan	California Hazardous Substance Delaware Air Quality Management Idaho Air Pollutant Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New Jersey TCPA EHS North Carolina Toxic Air Contaminant Pennsylvania Hazardous Substance Washington PELs for Air Contaminants

CALIFORNIA PROPOSITION 65: This product does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

16. OTHER INFORMATION

REASON FOR ISSUE: This SDS was compiled in conformance with the 2012 update to the OSHA Hazard Communication Standard (29 CFR 1910.1200) structure and standards, superseding all previous SDSs of the aforementioned product. Issued to update Targa Address and HMIS rating.

PREPARED BY: Total Safety d/b/a EHS Services; Updated by Targa Safety Team

REVISION HISTORY: This SDS replaces the 06/08/2015 SDS. Updated HMIS rating and Address

HMIS RATING

HEALTH	<input type="checkbox"/>	2
FLAMMABILITY	<input type="checkbox"/>	4
PHYSICAL HAZARD	<input type="checkbox"/>	0
PERSONAL PROTECTION	<input type="checkbox"/>	B

NFPA CODES



HMIS RATINGS NOTES: Please refer to Section 8 of this SDS for recommended personal protective equipment.

DATA SOURCES:

REFERENCES

- ACGIH. 2014 Guide to Occupational Exposure Values. Cincinnati, OH. Signature Publications, 2014.
- Forsberg, K. et al. Quick Selection Guide to Chemical Protective Clothing. Sixth Edition. Hoboken, NJ. John Wiley & Sons, 2014.
- Lide, D.R. CRC Handbook of Chemistry and Physics. 88th Edition. Boca Raton, FL. CRC Press, 2008.
- UNECE. Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Third Revised Edition. New York and Geneva. United Nations, 2009.
- US DOT; Pipeline and Hazardous Materials Safety Administration. 2008 Emergency Response Guidebook. Neenah, WI. J.J. Keller & Associates, Inc. 2008.
- US EPA. Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA) and Section 112(r) of the Clean Air Act. [Available] Online: <http://www.epa.gov/ceppo/pubs/title3.pdf>. Retrieved 02/02/2011.

ADDITIONAL SDS INFORMATION:

KEY / LEGEND

- ACGIH - American Conference of Governmental Industrial Hygienists
- ADR - Agreement on Dangerous Goods by Road

CAA - Clean Air Act
CAS - Chemical Abstracts Service Registry Number
CDG - Carriage of Dangerous Goods By Road and Rail Manual
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
CFR - Code of Federal Regulations
EINECS - European Inventory of Existing Chemical Substances Registry Number
ERG - Emergency Response Guidebook
EPCRA - Emergency Planning and Community Right-to-Know Act
GHS - Globally Harmonized System of Classification and Labeling of Chemicals
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
ICAO - International Civil Aviation Organization
IMDG - International Maritime Dangerous Goods Code
IMO - International Maritime Organization
N/E - Not Established
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PEL - Permissible Exposure Limit
PPE - Personal Protective Equipment
RCRA - Resource Conservation and Recovery Act
RID - Regulations Concerning the International Transport of Dangerous Goods by Rail
RQ - Reportable Quantities
SARA - Superfund Amendments and Reauthorization Act of 1986
SDS - Safety Data Sheet
TCC - Tag Closed Cup
TDG - Transportation of Dangerous Goods
TLV - Threshold Limit Value
TSCA - Toxic Substance Control Act
UN/NA - United Nations / North American Number
UNECE - United Nations Economic Commission for Europe
US DOT - United States Department of Transportation
US EPA - United States Environmental Protection Agency
Vol. - Volume
WHMIS - Workplace Hazardous Materials Information System

GENERAL STATEMENTS: Other information not included anywhere else in this SDS is included in this section if, in fact, such data exists.

MANUFACTURER DISCLAIMER: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.