

# SAFETY DATA SHEET

Nova Molecular Technologies, Inc.



Date Issued: 04/02/2015

SDS No: NMT2 05-007

## Flexsorb®SE

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Flexsorb®SE

**GENERAL USE:** Hydrogen sulfide gas scrubbing agent.

**CHEMICAL FAMILY:** Alkanolamine

**CHEMICAL NAME:** Hindered Alkanolamine

#### MANUFACTURER

Nova Molecular Technologies, Inc.  
1 Parker Place, Suite 725  
Janesville, WI 53545  
Customer Service: 800-445-6682 or 281-474-5550

#### 24 HR. EMERGENCY TELEPHONE NUMBERS

**For emergency, spill, leak, fire, exposure or accident, call:**

**CHEMTREC: 1-800-424-9300**

**Outside the United States, call: 703-527-3887  
(collect calls accepted)**

### 2. HAZARDS IDENTIFICATION

#### GHS CLASSIFICATIONS

##### Health:

Acute Toxicity (Oral), Category 4

Skin Corrosion, Category 1A

#### GHS LABEL



Corrosion



Exclamation  
Mark

**SIGNAL WORD:** DANGER

#### HAZARD STATEMENTS

H302: Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

#### PRECAUTIONARY STATEMENT(S)

##### Prevention:

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

##### Response:

P303+ P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with

water/shower.

P304+P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER or doctor/physician.

P330: Rinse mouth.

P363: Wash contaminated clothing before reuse.

**Storage:**

P405: Store locked up.

**Disposal:**

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

**EMERGENCY OVERVIEW**

**PHYSICAL APPEARANCE:** Colorless to light amber liquid.

**IMMEDIATE CONCERNS: HAZARD DESCRIPTION / WARNING INFORMATION SUMMARY - DANGER** – Corrosive liquid. May cause damage to skin, eyes, and gastrointestinal tract. Liquids may burn upon heating to temperatures at or above the flash point. May evolve oxides of carbon and nitrogen under fire conditions. Please read entire contents of Section 2 of this Safety Data Sheet (SDS) for details.

**POTENTIAL HEALTH EFFECTS**

**EYES:** Corrosive. Contact causes severe eye burns.

**SKIN:** Corrosive. Causes skin burning.

**INGESTION:** Corrosive. Causes burns to mouth, esophagus and stomach.

**INHALATION:** This is not a major route of exposure. Inhalation, however, may be harmful.

**REPRODUCTIVE TOXICITY**

**REPRODUCTIVE EFFECTS:** Not Established.

**TERATOGENIC EFFECTS:** Not Established.

**CARCINOGENICITY:** This product is not listed as a carcinogen by NTP, OSHA, or IARC.

**MUTAGENICITY:** This product is not anticipated to be a mutagen.

**ROUTES OF ENTRY:** Eye contact, ingestion, skin contact.

**SENSITIZATION:** This product is not expected to be sensitizing.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	Wt. %	CAS
Hindered Alkanolamine	95 - 99	Confidential
Diethylene Glycol	2	111-46-6

**COMMENTS:** The specific CAS number of hindered alkanolamine is considered a trade secret and are being withheld in accordance with 29 CFR 1910.1200 (i)(1)(i-iv). All applicable permissible exposure limits (PEL), threshold limit values (TLV), or other designated exposure limits, as well as properties and effects of the hazardous ingredients, are identified in this document. In the event of a medical emergency, the chemical identity of a trade secret chemical will be provided to the treating physician or nurse upon contacting the manufacturer or emergency telephone number provided in Section 1 of this SDS.

**4. FIRST AID MEASURES**

**EYES:** Immediately flush with large amounts of water, holding eyelids open, for at least 20 minutes. Repeat if necessary. Remove contact lenses, if present and easy to do. Get medical attention immediately.

**SKIN:** 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 immediately.

**INGESTION:** Do not induce vomiting. Have exposed individual rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Obtain medical assistance immediately and treat as directed by a medical professional.

**INHALATION:** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory

medical device. Call a physician if symptoms develop or persist.

**NOTES TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

## 5. FIRE FIGHTING MEASURES

**FLAMMABLE CLASS:** Class IIIB.

**GENERAL HAZARD:** Low hazard, liquid can burn upon heating to temperatures at or above the flash point. Toxic gases will form upon combustion.

**EXTINGUISHING MEDIA:**

**SMALL FIRE** - Dry chemical, carbon dioxide or water spray.

**LARGE FIRE** - Dry chemical, carbon dioxide, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire control water for later disposal; do not scatter the material.

**FIRE FIGHTING PROCEDURES: PROTECTIVE ACTIONS TO TAKE DURING FIRE FIGHTING** - Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. Cool containers with flooding quantities of water until well after fire is out. 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 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 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.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon oxides and nitrogen oxides.

## 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. As an immediate precautionary measure, isolate spill or leak area 50 meters (160 feet) in all directions for liquids and at least 25 meters (75 feet) for solids. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Stay upwind. Keep out of low areas.

**LARGE SPILL:** Use similar response procedures as indicated under Small Spill. Consider initial downwind evacuation for at least 800 meters (1/2 mile).

**GENERAL PROCEDURES: MATERIALS & METHODS (EQUIPMENT & TECHNIQUES) FOR CONTAINMENT & CLEANUP** - Call Emergency Telephone Number(s) provided in Section 1 of this SDS. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. 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. Wash exposed skin and clothing frequently. If needed, take first aid actions as indicated in Section 4 of this SDS. Restrict access to area as appropriate until cleanup operations are complete. Only trained personnel should conduct cleanup. Remove sources of ignition. Ventilate spill area if possible. Do not touch spilled material. Stop or reduce leaks if safe to do so. Use personal protective equipment recommended in Section 8. Dispose of spent material in accordance with all applicable local, state, and federal requirements.

**HANDLING:** Do not get in eyes, on skin, or on clothing. Do not take internally. Do not breathe vapors, gases, or dust. Avoid generating aerosols and mists. Keep away from acids and oxidizing agents. Keep containers closed when not in use. Have emergency equipment for fires, spills, leaks, etc. readily available. Laboratory samples should be stored and handled in a lab hood. Provide mechanical ventilation of combined spaces.

**STORAGE:** Store in a cool well-ventilated area away from direct sunlight. Store away from heat and sources of ignition. Use proper grounding procedures. Store the containers tightly closed. Store separately from acids and oxidizing agents. FLEXSORB® SE may be stored in steel, stainless steel, or aluminum containers. FLEXSORB® SE should NOT be stored in plastic containers, as it will slowly weaken many plastics.

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

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

**SHELF LIFE:** Ten (10) years. Contact Nova at 281-474-5550 if product turns brown from air exposure.

**ELECTROSTATIC ACCUMULATION HAZARD:** To minimize the hazard of static electricity during transfer operations, bonding and grounding may be necessary, but may not by themselves be sufficient. For more information, refer to OSHA Standard 29 CFR 1910.106; National Fire Protection Standard (NFPA) 77 - "Recommended Practice on Static Electricity"; and/or the American Petroleum Institute (API) Recommended Practice 2003 - "Protection Against Ignitions Arising Out of Static, Lightning and Stray Currents."

**UNSUITABLE CONSTRUCTION MATERIAL:** Copper, brass, and rubber.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)							
		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	AIHA/WEEL
Chemical Name		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Hindered Alkanolamine	TWA	N/E	N/E	N/E	N/E	1 <sup>[1]</sup>	N/E
	STEL	N/E	N/E	N/E	N/E	N/E	N/E
Diethylene Glycol	TWA	N/E	N/E	N/E	N/E	N/E	10
	STEL	N/E	N/E	N/E	N/E	N/E	N/E
<b>Footnotes:</b>							
1. Supplier recommendation.							

**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 splash-proof safety goggles and face shields where there is any possibility of product coming in contact with eyes. Ensure that an eye wash station is operable and nearby.

**SKIN:** Wear chemical resistant gloves, chemical suit, rubber boots, and full-face shield. Replace gloves regularly.

Material: Neoprene thickness: 18 mil (0.46 mm)

Note: This specification is for incidental exposure, not immersion.

**RESPIRATORY:** If significant mists, vapors, or aerosols are generated, or where concentrations exceed the limits given in this section, a NIOSH/MSHA approved respirator is recommended. An organic vapor cartridge with dust/mist pre-filter or supplied air may be used. In the event of emergency or planned entry into unknown concentrations, a positive pressure, full face, self-contained breathing apparatus should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance, and inspection.

**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 launder 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:** Amine odor.

**APPEARANCE:** Colorless to light amber liquid.

**pH:** 9

**Notes:** 1% in water.

**PERCENT VOLATILE:** 100

**FLASH POINT:** 112°C (234°F)

**FLAMMABLE LIMITS:** Not Established.

**AUTOIGNITION TEMPERATURE:** 320°C (608°F)

**VAPOR PRESSURE:** 4 Pa (38°C; 100°F); 11.5 Pa (49°C; 120°F)

**BOILING POINT:** 230°C (446°F)

**SOLUBILITY IN WATER:** > 500000 mg/l at 25°C (77°F)

**EVAPORATION RATE:** < 1 (n-Butyl Acetate)

**DENSITY:** 0.939 g/cm<sup>3</sup> at 24°C (75°F)

**COEFF. OIL/WATER:** Partition Coefficient: Log Po/w: -2.6 (20°C; 68°F)

**FAT SOLUBILITY:** > 50000 mg/100g (37°C; 99°F)

**SURFACE TENSION:** 38 mN/m (24°C; 75°F)

## 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.

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon oxides and nitrogen oxides.

**INCOMPATIBLE MATERIALS:** Contact with strong acids (i.e. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Contact with strong oxidizers (i.e. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions, and/or toxic vapors.

## 11. TOXICOLOGICAL INFORMATION

### ACUTE

Chemical Name	ORAL LD <sub>50</sub> (rat)	DERMAL LD <sub>50</sub> (rabbit)	INHALATION LC <sub>50</sub> (rat)
Diethylene Glycol	12565 mg/kg	11890 mg/kg	N/E

**Notes:** 28 Days Dermal Toxicity NOAEL = 10 mg/kg/day

Results based on 28-day dermal study and acute dermal results.

**ORAL LD<sub>50</sub>:** 1470 mg/kg

**EYE EFFECTS:** Corrosive to eyes.

**SKIN EFFECTS:** Corrosive to skin.

### CARCINOGENICITY

**IARC:** Not Listed.

**NTP:** Not Listed.

**OSHA:** Not Listed.

**CORROSIVITY:** This product is corrosive to the skin and eye.

**SENSITIZATION:** This product is not expected to be a sensitizer.

**NEUROTOXICITY:** Not Established.

**GENETIC EFFECTS:** Not Established.

**REPRODUCTIVE EFFECTS:** Not Established.

**TERATOGENIC EFFECTS:** Not Established.

**MUTAGENICITY:** This product is not anticipated to be mutagenic.

## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** The potential environmental hazard is moderate. Based on our recommended product application and the product's characteristics, the potential environmental exposure is low.

**BIOACCUMULATION/ACCUMULATION:** This product is not expected to be readily biodegradable (5% after 28 days).

**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)

**96-HOUR LC<sub>50</sub>:** 255 mg/L

**48-HOUR EC<sub>50</sub>:** 60 mg/L

### CHEMICAL FATE INFORMATION: PERSISTENCE & DEGRADABILITY –

**COD:** 0.938 g/g

**BOD:** 0.00095 g/g

**BOD/COD Ratio:** 0.049%

**Inherent Biodegradability:** 80% (26 day study)

**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

**DISPOSAL METHOD:** Toxic gases will form upon combustion. Empty containers retain product residue (liquid/and or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition as they may explode and cause injury or death.

**EMPTY CONTAINER:** Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of according to local, state and federal regulations.

**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.

**RCRA HAZARD CLASS:** D002 (Corrosive)

**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:** Amines, liquid, corrosive, n.o.s. (Alkyl amine alcohol)

**TECHNICAL NAME:** Alkyl amine alcohol

**PRIMARY HAZARD CLASS/DIVISION:** 8

**UN/NA NUMBER:** 2735

**PACKING GROUP:** II

**NAERG:** 153

**LABEL:** Corrosive.

**MARINE POLLUTANT :** Not Listed.

### ROAD AND RAIL (ADR/RID)

**PROPER SHIPPING NAME:** Amines, liquid, corrosive, n.o.s. (Alkyl amine alcohol)

**UN NUMBER:** 2735  
**HAZARD CLASS:** 8  
**PACKING GROUP:** II  
**LABEL:** Corrosive

**AIR (ICAO/IATA)**

**SHIPPING NAME:** Amines, liquid, corrosive, n.o.s. (Alkyl amine alcohol)  
**TECHNICAL NAME:** Alkyl amine alcohol  
**UN/NA NUMBER:** 2735  
**PRIMARY HAZARD CLASS/DIVISION:** 8  
**PACKING GROUP:** II  
**ERG:** 153  
**CARGO AIRCRAFT LIMIT:** 30L  
**LABEL:** Corrosive.

**VESSEL (IMO/IMDG)**

**SHIPPING NAME:** Amines, liquid, corrosive, n.o.s. (Alkyl amine alcohol)  
**TECHNICAL NAME:** Alkyl amine alcohol  
**UN/NA NUMBER:** 2735  
**PRIMARY HAZARD CLASS/DIVISION:** 8  
**EmS:** F-A, S-B  
**MARINE POLLUTANT:** Not Listed.  
**LABEL:** Corrosive.

<b>15. REGULATORY INFORMATION</b>
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**UNITED STATES****DOT LABEL SYMBOL AND HAZARD CLASSIFICATION**

Corrosive

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)****311/312 HAZARD CATEGORIES:** Immediate (acute) health hazard.**FIRE:** No      **PRESSURE GENERATING:** No      **REACTIVITY:** Yes      **ACUTE:** Yes      **CHRONIC:** No**SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR370):** Under SARA 311 and 312, the EPA has established threshold quantities for reporting hazardous chemicals. The current thresholds are 500 lbs. for the threshold planning quantity (TPQ) for extremely hazardous substances and 10,000 lbs. for all other hazardous chemicals.**313 REPORTABLE INGREDIENTS:** None of the components are listed.**302/304 EMERGENCY PLANNING****EMERGENCY PLAN:** None of the components are listed.**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT)****CERCLA REGULATORY:** None of the components are listed.**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

Chemical Name	CAS
Hindered Alkanolamine	Confidential
Diethylene Glycol	111-46-6

**CLEAN AIR ACT****40 CFR PART 68---RISK MANAGEMENT FOR CHEMICAL ACCIDENT RELEASE PREVENTION:** This product does not contain and is not manufactured with Class I or Class II ozone depleting chemicals, as defined in the Clean Air Act of 1990.

**STATES WITH SPECIAL REQUIREMENTS**

Chemical Name	Requirements
Diethylene Glycol	Minnesota Hazardous Substance Pennsylvania Hazardous Substance

**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.

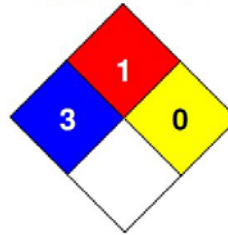
**CARCINOGEN:** This product is not listed as a carcinogen under NTP, IARC, or OSHA.

**16. OTHER INFORMATION**

**PREPARED BY:** Total Safety d/b/a EHS Services

**HMIS RATING**

<b>HEALTH</b>	<input type="checkbox"/>	<b>3</b>
<b>FLAMMABILITY</b>	<input type="checkbox"/>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<input type="checkbox"/>	<b>0</b>
<b>PERSONAL PROTECTION</b>	<input type="checkbox"/>	<b>H</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 Conversation 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.