

SAFETY DATA SHEET

Nova Molecular Technologies, Inc.



Date Issued: 2/11/2014
 SDS No: NMT205-003

**Nova
 Acetonitrile**

1. PRODUCT AND COMPANY IDENTIFICATION**PRODUCT NAME:** A cetonitrile**GENERAL USE:** Industrial solvent.**MOLECULAR FORMULA:** CH₃CN**GENERIC NAME:** Cyanomethane; Ethanenitrile; Ethyl nitrile; Methyl cyanide; Methanecarbonitrile**DISTRIBUTOR**

Nova Molecular Technologies, Inc.
 208 South Magnolia
 Sumter, SC 29150
 Customer Service 803-778-0264

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:**

Eye Irritation, Category 2A

Acute Toxicity (Inhalation), Category 4

Acute Toxicity (Oral), Category 4

Hazard Not Otherwise Classified (Skin Corrosion/Irritation - Mild Skin Irritant), Category 3

Physical:

Flammable Liquids, Category 2

GHS LABEL

Flame

Exclamation
mark**SIGNAL WORD:** DANGER**HAZARD STATEMENTS**

H225: Highly flammable liquid and vapor.

H319: Causes serious eye irritation.

H332: Harmful if inhaled.

H302: Harmful if swallowed.

PRECAUTIONARY STATEMENT(S)**Prevention:**

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

P233: Keep container tightly closed.

P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting/equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

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

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P264: Wash thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.
 P271: Use only outdoors or in a well-ventilated area.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.
 P284: Wear respiratory protection.

Response:

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.
 P312: Call a POISON CENTER or doctor/physician if you feel unwell.
 P320: Specific treatment is urgent (see ... on this label).
 P330: Rinse mouth.
 P337+P313: If eye irritation persists: Get medical advice/attention.
 P370+P378: In case of fire: Use a Class B, multipurpose dry chemical, or carbon dioxide fire extinguisher for extinction.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.
 P403+P235: Store in a well-ventilated place. Keep cool.
 P405: Store locked up.

Disposal:

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

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Colorless, mobile liquid.

IMMEDIATE CONCERNS: HAZARD DESCRIPTION / WARNING INFORMATION SUMMARY - Do not ingest. Do not get in eyes, on skin or clothing. Do not breathe vapor or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Effects may be delayed. Please read entire contents of Section 2 of this Safety Data Sheet (SDS) for details.

POTENTIAL HEALTH EFFECTS

EYES: Contact may cause severe with reversible corneal changes. Vapors may cause irritation.

SKIN: Contact may cause mild skin irritation.

SKIN ABSORPTION: May be absorbed through the skin to cause effects similar to indigestion.

INGESTION: May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

INHALATION: May be harmful if inhaled. Causes respiratory tract irritation.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: This product is not anticipated to be a reproductive toxin.

TERATOGENIC EFFECTS: There is experimental evidence that this chemical may cause adverse effects on the developing fetus with maternally toxic effects.

CARCINOGENICITY: This product is not listed as a carcinogen by NTP, OSHA or IARC. See Section 11 of this SDS for more details.

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

ROUTES OF ENTRY: Inhalation, skin and eye contact, skin absorption, ingestion.

TARGET ORGAN STATEMENT: Kidneys, liver, cardiovascular system, upper respiratory tract, skin, eyes and central nervous system (CNS).

SENSITIZATION: Not Established.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name | Vol. % | CAS |
|---------------|--------|---------|
| Acetonitrile | 100 | 75-05-8 |

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. Seek medical assistance if irritation persists.

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.

INGESTION: Get immediate medical attention. Do not wait for symptoms to develop. Do not induce vomiting unless directed to by medical personnel. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, monitor for breathing difficulty. If victim is symptomatic, treat as described under inhalation.

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. Authorized personnel, acting under standing instructions, may break a capsule of amyl nitrile in a handkerchief and hold it about one inch from the patient's mouth and nostrils for 30 seconds every minute. Use a new capsule every 3 minutes. Get medical attention.

NOTES TO PHYSICIAN: The onset of symptoms is typically delayed for up to several hours after oral inhalation or dermal contact. The prolonged duration of symptoms, regardless of route of exposure, may require repeat doses of cyanide antidotes. Treat as in cyanide poisoning. Toxicity may be delayed due to metabolic release of cyanide. Support respiratory and cardiovascular function.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:

SMALL FIRE - Dry chemical, CO₂, water spray or alcohol-resistant foam.

LARGE FIRE - Water spray, fog or alcohol-resistant foam. Do not use straight streams. Dike the fire-control water for later disposal; do not scatter the material.

HAZARDOUS COMBUSTION PRODUCTS: Irritating or toxic substances may be emitted upon thermal decomposition, which may include oxides of carbon and nitrogen (carbon monoxide, carbon dioxide, nitrous oxide, and nitrogen dioxide).

FIRE FIGHTING PROCEDURES: PROTECTIVE ACTIONS TO TAKE DURING FIRE FIGHTING - Use water fog, foam, dry chemicals or carbon dioxide. DO NOT FIGHT FIRE WHEN IT REACHES MATERIAL. Withdraw from fire and let it burn. Promptly isolate the scene by removing all persons from vicinity. Use water jet to cool fire on exposed structures and containing vessels in order to prevent pressure build up, autoignition or explosion, and to protect personnel. If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and protect personnel attempting to stop a leak. Use water to dilute spills and flush them away from sources of ignition. Persons involved in fire fighting 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.

FIRE EXPLOSION: EXTREMELY FLAMMABLE. Vapor may cause flash fire. Vapors may accumulate in low or confined areas, spread to distant ignition sources and flash back. Runoff to sewer may cause fire or explosion hazard. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Container explosion may occur under fire conditions or when heated. Water is 100% miscible with acetonitrile and should be used to drop concentration below mixture concentration ratio which can ignite.

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 50 meters (150 feet) in all directions. 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. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to suitable containers. Use clean non-sparking tools to collect absorbed material.

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. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. For a large spill, consider initial downwind evacuation for at least 300 meters (1000 feet). Use clean non-sparking tools to collect absorbed material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing indicated in Section 8 of this SDS.

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. If needed, take first aid actions as indicated in Section 4 of this SDS. Never use as a cleaning solvent or degreaser. Use explosion-proof electrical equipment. No smoking should be allowed in area of use.

HANDLING: Wear appropriate personal protective equipment and use exposure controls as indicated in Section 8. Vent slowly to the atmosphere when opening. Avoid all contact with skin and eyes. Avoid breathing product vapors. Remove contaminated clothing immediately. Wash with soap and water after working with this product and before reuse. Empty containers retain product residue and can be dangerous. Keep container tightly closed. Do not pressurize, cut, weld, braze, solder, drill or grind empty containers. Do not expose empty containers to heat, sparks, or open flames. Avoid ingestion and inhalation.

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. 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.

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

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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

| OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200) | | | | | |
|---|------|-----------------|-------------------|-----------|-------------------|
| | | EXPOSURE LIMITS | | | |
| | | OSHA PEL | | ACGIH TLV | |
| Chemical Name | | ppm | mg/m ³ | ppm | mg/m ³ |
| Acetonitrile | TWA | 40 | 70 | 20 | 34 |
| | STEL | N/E | N/E | N/E | N/E |

ENGINEERING CONTROLS: Provide adequate general and local exhaust ventilation. Provide readily accessible eye wash stations and emergency showers. Where explosive mixtures may be present, electrical systems safe for such locations must be used.

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 gloves that cannot be penetrated by chemicals or oil (butyl rubber gloves). The correct choice of protective gloves depends upon the conditions of work and use and condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should be chosen in consultation with the supplier and manufacturer with a full assessment of the working conditions.

RESPIRATORY: Use with adequate ventilation. Do not breathe vapor or mist. If concentration is unknown, a Self-Contained Breathing Apparatus (SCBA) should be used to avoid inhalation of the product.

PROTECTIVE CLOTHING: Avoid skin contact. Wear long-sleeved fire-retardant garments while working with flammable and combustible liquids. Additional chemical-resistant protective gear may be required if splashing or spraying conditions exist. This may include an apron, boots and additional facial protection. If product comes in contact with clothing, immediately remove soaked clothing and shower. Wear clothing and footwear that cannot be penetrated by chemicals or oil.

WORK HYGIENIC PRACTICES: Consider the potential hazards of this material, applicable exposure limits, job activities, environmental working conditions, and other substances in the workplace when designing engineering controls and selecting personal protective equipment (PPE). The user should read and understand all manufacturer instructions and limitations supplied with the personal protection equipment before use.

OTHER USE PRECAUTIONS: FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR DEATH 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: Faint, pungent odor.

APPEARANCE: Colorless, mobile liquid.

pH: Not Yet Determined.

PERCENT VOLATILE: 99 at 21°C (70°F)

FLASH POINT: 5.6°C (42°F) FLAMMABLE

LIMITS: 4.4% to 16%

AUTOIGNITION TEMPERATURE: 524°C (975°F)

VAPOR PRESSURE: 9.681 kPa (72.80 mmHg) at 20°C (68°F)

VAPOR DENSITY: 1.43 (Air = 1)

BOILING POINT: 81.6°C (180°F) at 760 mmHg.

MELTING POINT: -45.7°C (-50.26°F)

POUR POINT: Not Established.

SOLUBILITY IN WATER: Miscible.

EVAPORATION RATE: > 1 (n-Butyl Acetate = 1)

SPECIFIC GRAVITY: 0.786

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 or open flames. Avoid exposure to moisture.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen cyanide, nitrogen oxide, carbon monoxide, carbon dioxide.

INCOMPATIBLE MATERIALS: Avoid contact with strong oxidizing agents, strong reducing agents, and strong acids. Refer to Section 5 in this SDS for additional information.

11. TOXICOLOGICAL INFORMATION

ACUTE

| Chemical Name | ORAL LD ₅₀ (rat) | DERMAL LD ₅₀ (rabbit) | INHALATION LC ₅₀ (rat) |
|---------------|--------------------------------|-------------------------------------|--------------------------------------|
| Acetonitrile | 617 mg/kg | > 2000 mg/kg | 7551 ppm (8 hours) |

EYES: Draize test, rabbit, eye: 100 uL/24H Moderate

SKIN ABSORPTION: > 2000 mg/kg

ORAL LD₅₀:

Oral, mouse: LD₅₀ = 269 mg/kg

Oral, rabbit: LD₅₀ = 50 mg/kg

Oral, rat: LD₅₀ = 2460 mg/kg

INHALATION LC₅₀:

Inhalation, mouse: LC₅₀ = 2693 ppm/1H

Inhalation, rabbit: LC₅₀ = 2828 ppm/4H

EYE EFFECTS: Contact causes severe irritation with reversible corneal changes. Vapors may cause irritation.

SKIN EFFECTS: Contact may result in mild skin irritation. May be absorbed through the skin to cause effects similar to indigestion. Effects may be delayed.

CHRONIC TOXICITY & HEALTH EFFECTS - May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase and impairing cellular respiration. Exposure to small amounts of cyanide compounds over long periods of time is reported to cause loss of appetite, headache, weakness, nausea, dizziness, and symptoms of irritation to the upper respiratory tract and eyes. Animal studies reflect that the product may affect the liver and kidneys.

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

REPRODUCTIVE EFFECTS: No component of this product at levels greater than 0.1% is classified by established regulatory

criteria as a reproductive toxin.

TARGET ORGANS: May cause damage to liver, heart, kidneys, eyes, central nervous system, and respiratory system.

TERATOGENIC EFFECTS: There is experimental evidence that this chemical may cause adverse effects on the developing fetus at maternally toxic effects.

MUTAGENICITY: No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Estimated Koc value = 16. Acetonitrile is expected to weakly adsorb to most soils based on the Koc value. Volatilization from soil surfaces and leaching into ground water is expected to be significant. Estimated BCF value = 0.3. This value indicates that acetonitrile will not significantly bioconcentrate in aquatic organisms or adsorb to suspended solids and sediments in water. Acetonitrile is unreactive towards photochemically-generated free radicals and direct photolysis in the gaseous phase.

BIOACCUMULATION/ACCUMULATION: This product is not expected to bioaccumulate.

AQUATIC TOXICITY (ACUTE)

96-HOUR LC₅₀: 1640 mg/L (Bluegill/Sunfish).

96-HOUR EC₅₀: 1640 mg/L (Fathead Minnow).

Notes:

Fish: Fathead Minnow: 1150 ppm; 24 Hr; TLm (hard water)

Fish: Fathead Minnow: 1000 mg/L; 96 Hr; TLm (soft water)

Fish: Bluegill/Sunfish: 1850 mg/L; 96 Hr; TLm (soft water)

CHEMICAL FATE INFORMATION: This product is readily biodegradable.

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: 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. Maximize material recovery for reuse or recycling. Recovered non-usable material may be regulated by US EPA as a hazardous waste due to its ignitability (D001) and/or its toxic (D018) characteristics. In addition, 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 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 Parts 260 through 271). Contact your regional US EPA office for guidance concerning case specific disposal issues. State and/or local regulations might be even more restrictive.

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: Acetonitrile.

PRIMARY HAZARD CLASS/DIVISION: 3

UN/NA NUMBER: 1648

PACKING GROUP: II

NAERG: 127

REPORTABLE QUANTITY (RQ) UNDER CERCLA: 5000 lbs

AIR (ICAO/IATA)

SHIPPING NAME: Acetonitrile.

UN/NA NUMBER: 1648

PRIMARY HAZARD CLASS/DIVISION: 3

PACKING GROUP: II

ERG: 127

VESSEL (IMO/IMDG) SHIPPING**NAME:** Acetonitrile.**UN/NA NUMBER:** 1648**PRIMARY HAZARD CLASS/DIVISION:** 3**PACKING GROUP:** II**CANADA TRANSPORT OF DANGEROUS GOODS****SHIPPING NAME:** Acetonitrile.**UN/NA NUMBER:** 1648**PRIMARY HAZARD CLASS/DIVISION:** 3**PACKING GROUP:** II**15. REGULATORY INFORMATION****UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)****311/312 HAZARD CATEGORIES:** Fire Hazard. Immediate (Acute) Health Hazard.**FIRE:** Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** No**EPCRA SECTION 313 SUPPLIER NOTIFICATION**

| Chemical Name | Vol. % | CAS |
|---------------|--------|---------|
| Acetonitrile | 100 | 75-05-8 |

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

| Chemical Name | Vol. % | CERCLA RQ |
|---------------|--------|-----------|
| Acetonitrile | 100 | 5,000 |

TSCA (TOXIC SUBSTANCE CONTROL ACT)

| Chemical Name | CAS |
|---------------|---------|
| Acetonitrile | 75-05-8 |

STATES WITH SPECIAL REQUIREMENTS

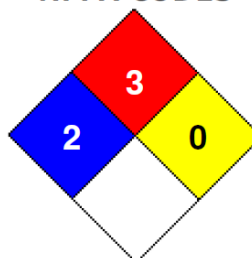
| Chemical Name | Requirements |
|---------------|--|
| Acetonitrile | CA Hazardous Substance Delaware Air Quality Management Idaho Air Pollutant Illinois Toxic Air Contaminant Maine Hazardous Air Pollutant Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New York Hazardous Substance Pennsylvania Hazardous Substance Washington PELs for Air Contaminants Wisconsin Hazardous Air Containment |

16. OTHER INFORMATION

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

HMIS RATING

| | | |
|----------------------------|--------------------------|----------|
| HEALTH | <input type="checkbox"/> | 2 |
| FLAMMABILITY | <input type="checkbox"/> | 3 |
| PHYSICAL HAZARD | <input type="checkbox"/> | 0 |
| PERSONAL PROTECTION | <input type="checkbox"/> | D |

NFPA CODES**HMIS RATINGS NOTES:** Please refer to Section 8 of this SDS for recommended personal protective equipment.**DATA SOURCES:****REFERENCES**

- ACGIH. 2013 Guide to Occupational Exposure Values. Cincinnati, OH. Signature Publications, 2013.
- Forsberg, K.; Mansdorf, S.Z. Quick Selection Guide to Chemical Protective Clothing. Fifth Edition. Hoboken, NJ. John Wiley & Sons, 2007.
- 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.