

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Issue date: 12/14/2010 Revision date: 5/17/2023 Supersedes: 6/14/2016 Version: 5.2

SECTION 1: Identification

1.1. Identification			
Product form Substance name Chemical name CAS-No. Product code Formula	 Substance PYRIDINE-D5 "100%" (D, 99.94%) PYRIDINE-D5 "100%" (D, 99.94%) 110-86-1 DLM-39 C5H5N 		
1.2. Recommended use and restrictions	1.2. Recommended use and restrictions on use		
No additional information available			
1.3. Supplier			
Cambridge Isotope Laboratories, Inc. 50 Frontage Rd 01810 ANDOVER, MA, 01810 USA T 1-800-322-1174 <u>cilsales@isotope.com</u> - <u>www.isotope.com</u>			
1.4. Emergency telephone number			
Emergency number	: 1-703-741-5970 Chemtrec 1-800-424-9300 24 hours		

SECTION 2: Hazard(s) identification

GHS US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapor
Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (dermal) Category 4	H312	Harmful in contact with skin
Acute toxicity (inhalation) Category 4	H332	Harmful if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity – Single exposure, Category 3,	H335	May cause respiratory irritation
Respiratory tract irritation		
Hazardous to the aquatic environment – Acute Hazard Category 3	H402	Harmful to aquatic life
Full text of H statements : see section 16		

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US) Hazard statements (GHS US) : Danger

:

: H225 - Highly flammable liquid and vapor H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled

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H319 - Causes serious eye irritation H335 - May cause respiratory irritation H402 - Harmful to aquatic life Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smokina. P233 - Keep container tightly closed. P240 - Ground/Bond container and receiving equipment. P241 - Use explosion-proof electrical, lighting, ventilating equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P261 - Avoid breathing dust, fume, mist, gas, spray, vapors. P264 - Wash Both hands thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P280 - Wear protective clothing, protective gloves. P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell. P302+P352 - If on skin: Wash with plenty of water. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340 - If inhaled: Remove person to fresh air and keep 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. P312 - Call a poison center or doctor if you feel unwell. P321 - Specific treatment (see Hazard pictograms (CLP) on this label). P322 - Specific treatment (see supplemental first aid instruction on this label) P330 - Rinse mouth. P332+P313 - If skin irritation occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P370+P378 - In case of fire: Use Alcohol resistant foam, Carbon dioxide, Dry chemical, Water spray to extinguish. 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. P501 - Dispose of contents/container to Comply with applicable regulations.

H315 - Causes skin irritation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	GHS US classification
PYRIDINE-D5 "100%" (D, 99.94%) (Main constituent)	CAS-No.: 110-86-1	100	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Aquatic Acute 3, H402

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures		
4.1. Description of first aid measures		
First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.	
First-aid measures after inhalation	 If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician. 	
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician.	
First-aid measures after eye contact	: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.	
First-aid measures after ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.	
4.2. Most important symptoms and effects (acute and delayed)		
Potential Adverse human health effects and symptoms	: Burning sensation, Cough, Wheezing, Laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Dizziness, Tachycardia, Nervousness, Insomnia, Skin disorders, Loss of appetite. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.	
Symptoms/effects after inhalation	: May be harmful if inhaled. Causes respiratory tract irritation.	
Symptoms/effects after skin contact	: Harmful if absorbed through skin. Causes skin irritation.	
Symptoms/effects after eye contact	: Causes eye irritation.	
	: Harmful if swallowed.	
Symptoms/effects after ingestion		

No additional information available

SECTION 5: Fire-fighting measures			
5.1. Suitable (and unsuitable) extinguishing media			
Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.		
5.2. Specific hazards arising from the chemical			

No additional information available

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5.3. Special protective equipment and precautions for fire-fighters Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary. Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Other information : Use water spray to cool unopened containers. SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures

: Use personal protective equipment, and ensure adequate ventilation. Avoid breathing vapors, mist, gas. Remove ignition sources, and move personnel to safe area. Vapors accumulate especially in low areas to form explosive concentrations.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up	
Methods for cleaning up	: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet- brushing and place in container for disposal according to local regulations.
6.4. Reference to other sections	

No additional information available

SECTION 7: Handling and storage 7.1. Precautions for safe handling			
7.2. Conditions for safe storage, including any incompatibilities			
Storage conditions	: Store at room temperature away from light and moisture.		

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)		
USA - ACGIH - Occupational Exposure Limits		
Local name	Pyridine	
ACGIH OEL TWA [ppm] 1 ppm Liver damage. Kidney damage. Skin irritation. Confirmed animal carcinogen		
Remark (ACGIH)	TLV® Basis: Skin irr; liver & kidney dam. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)	

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PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)		
Regulatory reference	ACGIH 2022	
USA - OSHA - Occupational Exposure Limits		
Local name	Pyridine	
OSHA PEL TWA [1]	15 mg/m³ The value in mg/m3 is approximate.	
OSHA PEL TWA [2]	5 ppm	
Remark (OSHA)	PEL 5 ppm 15 mg/m3 California permissible exposure limits for chemical contaminants.	
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1	
USA - NIOSH - Occupational Exposure Limits		
NIOSH REL TWA	15 mg/m³ The value in mg/m3 is approximate.	
NIOSH REL TWA [ppm]	5 ppm	
8.2. Appropriate engineering controls		

Appropriate engineering controls

: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.

Materials for protective clothing:

Wear suitable protective clothing and gloves

Hand protection:

Wear suitable protective clothing and gloves

Eye protection:

Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection:

When appropriate, use NIOSH/CEN approved respirator.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties		
9.1. Information on basic phy	vsical and chemical properties	
Physical state	: Liquid	
Appearance	: Liquid.	
Color	: Colorless	

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Odor	: Unpleasant
Odor threshold	: No data available
рН	: 8.5 at 15.82 g/l at 25 °C (77 °F)
Melting point	: -42 °C (-44 °F) - lit
Freezing point	: No data available
Boiling point	: 115 °C (239 °F) - lit
Flash point	: 17 °C (62.6 °F) - closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 13.3 hPa (10 mmHg) at 13.2 °C (55.8 °F); 26.7 hPa (20.0 mmHg) at 25 °C (77 °F)
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 0.978 g/ml at 25 °C (77 °F)
Molecular mass	: 84.13 g/mol (Labeled)
Solubility	: Soluble in water.
	Water: %
Partition coefficient n-octanol/water (Log Pow)	: 0.65
Auto-ignition temperature	: 482 °C (899.6 °F)
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 1.8 – 12.4 % (V)
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapors may form explosive mixture with air.

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Avoid Heat, Flames and Sparks.

10.5. Incompatible materials

Strong oxidizing agents, Strong acids.

10.6. Hazardous decomposition products

Formed under fire conditions - Carbon oxides, nitrogen oxides (NOx).

SECTION 11: Toxicological information		
11.1. Information on toxicological	effects	
Acute toxicity (oral)	: Harmful if swallowed.	

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	Harmful in contact with skin. Harmful if inhaled.
PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)	
LD50 oral rat	891 mg/kg Remarks: Sense Organs and Special Senses (Nose, Eye, Ear and Taste): Eye: Ptosis. Behavioral: Somnolence (general depressed activity). Behavioral: Coma.
LD50 dermal rabbit	1121 mg/kg Remarks: Behavioral: Ataxia. Gastrointestinal: Changes in structure or function of salivary glands. Liver: Other changes.
LC50 Inhalation - Rat	28500 mg/m ³ 1 h; Remarks: Sense Organs and Special Senses (Nose, Eye, Ear and Taste): Eye: Lacrimation. Behavioral: Somnolence (general depressed activity). Lungs, Thorax, or Respiration: Dyspnea.
LC50 Inhalation - Rat [ppm]	5400 ppm/4h
ATE US (oral)	891 mg/kg body weight
ATE US (dermal)	1121 mg/kg body weight
ATE US (gases)	5400 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
Skin corrosion/irritation :	Causes skin irritation.
Serious eye damage/irritation	pH: 8.5 at 15.82 g/l at 25 °C (77 °F) Causes serious eye irritation. pH: 8.5 at 15.82 g/l at 25 °C (77 °F)
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity :	Not classified
Carcinogenicity :	Not classified
PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)	
IARC group	2B - Possibly carcinogenic to humans
Reproductive toxicity :	Not classified
STOT-single exposure :	May cause respiratory irritation.
STOT-repeated exposure :	Not classified
Aspiration hazard	Not classified
Viscosity, kinematic	No data available
Potential Adverse human health effects and symptoms	Burning sensation, Cough, Wheezing, Laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Dizziness, Tachycardia, Nervousness, Insomnia, Skin disorders, Loss of appetite. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Symptoms/effects after inhalation :	May be harmful if inhaled. Causes respiratory tract irritation.
Symptoms/effects after skin contact	Harmful if absorbed through skin. Causes skin irritation.
Symptoms/effects after eye contact	Causes eye irritation.
Symptoms/effects after ingestion	Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity		
	The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.	
PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)		
LC50 - Fish [1]	93.8 mg/l Pimephales promelas(fathead minnow)- 96 h	
EC50 - Crustacea [1]	940 mg/l Daphnia magna(Water flea)- 48 h	

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PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)			
EC50 - Other aquatic organisms [1]	1140 mg/l Daphnia magna(Water flea) - 48 h		
LC50 - Fish [2]	26 mg/l Cyprinus carpio (Carp) - 96 h		
LC50 - Other aquatic organisms [2]	520 mg/l Dphnia pulex (Water flea) - 48 h		
ErC50 algae	0.1 mg/l		
NOEC chronic algae	0.01 mg/l		
12.2. Persistence and degradability			
PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)			
Persistence and degradability	Aerobic - exposure time: 28 d.		
BOD (% of ThOD)	97 % ThOD Readily biodegradable		
12.3. Bioaccumulative potential			
PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)			
Partition coefficient n-octanol/water (Log Pow)	0.65		
12.4. Mobility in soil			
No additional information available			
12.5. Other adverse effects			
Other adverse effects :	An environmental hazard cannot be excluded in the event of an unprofessional handling or disposal. Harmful to aquatic life.		

SECTION 13: Disposal considerations		
13.1. Disposal methods		
Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.	
Product/Packaging disposal recommendations	: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.	
Ecology - waste materials	: Dispose of as unused product.	

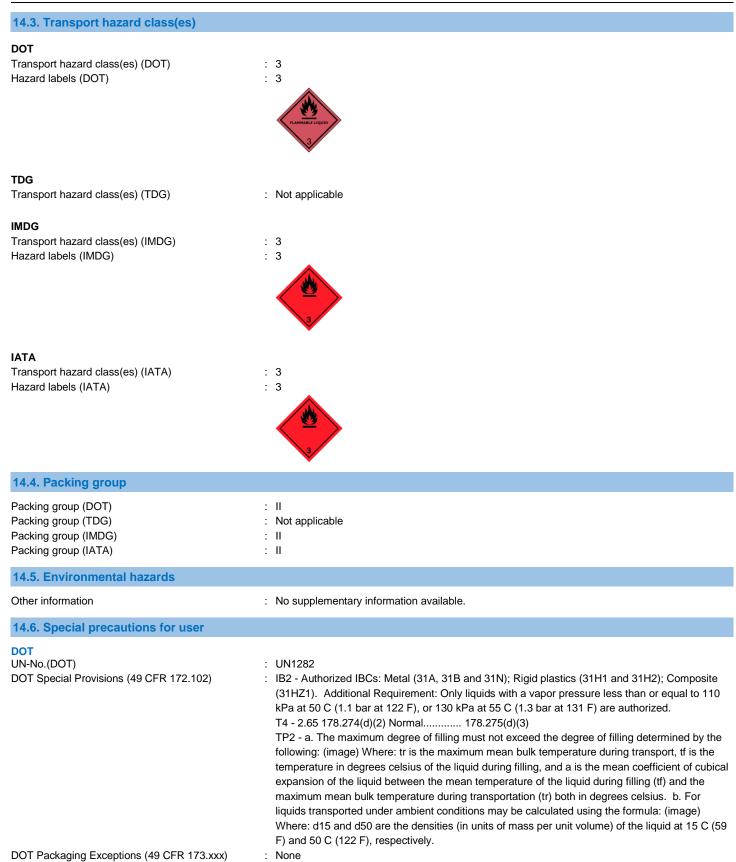
SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number		
DOT NA No UN-No. (TDG) UN-No. (IMDG) UN-No. (IATA)	: UN1282 : Not applicable : 1282 : 1282	
14.2. UN proper shipping name		
Proper Shipping Name (DOT) Proper Shipping Name (TDG) Proper Shipping Name (IMDG) Proper Shipping Name (IATA)	: Pyridine : Not applicable : PYRIDINE : Pyridine	

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DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Quantity Limitations Passenger aircraft/rail (49	: 5L
CFR 173.27)	
DOT Quantity Limitations Cargo aircraft only (49	: 60 L
CFR 175.75)	
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 21 - Segregation same as for flammable liquids,100 - Stow "away from" flammable solids
TDG No data available	
IMDG	
Limited quantities (IMDG)	: 1L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage)	: S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS
Stowage category (IMDG)	: B
Stowage and handling (IMDG)	: SW2
Flash point (IMDG)	: 17°C c.c.
Properties and observations (IMDG)	: Colourless or slightly yellow liquid with a pungent odour. Flashpoint: 17°C c.c. Explosive limits: 1.8% to 12.4% Miscible with water. Harmful by inhalation.
MFAG-No	: 129
ΙΑΤΑ	
PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y341
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 353
PCA max net quantity (IATA)	: 555
CAO packing instructions (IATA)	: 364
CAO max net quantity (IATA)	: 60L
ERG code (IATA)	: 3L
	. JL

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations		
PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)		
Subject to reporting requirements of United States SARA Section 313		
CERCLA RQ 1000 lb		
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard	

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

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Name	CAS-No.	Listing	Commercial status	Flags
PYRIDINE-D5 "100%" (D, 99.94%)	110-86-1	Present	Active	

15.2. International regulations

CANADA

PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

 PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)

 Listed on IARC (International Agency for Research on Cancer)

 Listed on INSQ (Mexican National Inventory of Chemical Substances)

 Listed on TECI (Thailand Existing Chemicals Inventory)

15.3. US State regulations

PYRIDINE-D5 "100%" (D, 99.94%) (110-86-1)		
U.S California - Proposition 65 - Carcinogens List	Yes	
U.S California - Proposition 65 - Developmental Toxicity	No	
U.S California - Proposition 65 - Reproductive Toxicity - Female	No	
U.S California - Proposition 65 - Reproductive Toxicity - Male	No	
State or local regulations	U.S Massachusetts - Right To Know List U.S New Jersey - Right to Know Hazardous Substance List U.S Pennsylvania - RTK (Right to Know) List	

SECTION 16: Other information

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Revision date Other information : 05/17/2023

: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of H-phrases		
H225	225 Highly flammable liquid and vapor	
H302	Harmful if swallowed	
H312	Harmful in contact with skin	
H315	Causes skin irritation	
H319	Causes serious eye irritation	

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Full text of H-phrases		
H332	Harmful if inhaled	
H335	May cause respiratory irritation	n
H402	Harmful to aquatic life	
NFPA health haza	rd	: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard		: 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.
NFPA reactivity		: 0 - Material that in themselves are normally stable, even under fire conditions.
Hazard Rating		
Health		: 2 Moderate Hazard - Temporary or minor injury may occur
Includes flammable liquids with flash points below 73 F and boiling points above 100		: 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB IC)
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire condition		: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.