N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/03/2014 Revision date: 05/05/2018 Supersedes: 07/06/2017 Version: 2.1

DLM-8252-S

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixtures

Product name : N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2

Product code : DLM-8252-S

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Professional use

Industrial/Professional use spec : For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral)	H302
Acute Tox. 4 (Dermal)	H312
Skin Irrit. 2	H315
Eye Irrit. 2	H319
Carc. 2	H351
STOT SE 3	H336
STOT SE 3	H335
STOT RE 2	H373

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

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.3; R40
T; R39/23/24/25
Xn; R22
Xn; R48/21/22
Xi; R36/37/38
R67

Full text of R-phrases: see section 16

GHS-US classification

Acute Tox. 4 (Oral)	H302
Acute Tox. 4 (Dermal)	H312
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Carc. 2	H351
STOT SE 3	H336
STOT SE 3	H335
STOT RE 2	H373

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Liver, Pancreas, Blood, Central nervous system, Heart, Kidney. Inhalation: anesthetic effects, nausea and drunkeness.

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS08 GHS07

Signal word (CLP) : Warning

Hazard statements (CLP) : H302+H312 - Harmful if swallowed or in contact with skin
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer (in contact with skin, if inhaled, if swallowed)
H373 - May cause damage to organs (liver, pancreas, central nervous system, blood, heart, kidneys) through prolonged or repeated exposure (in contact with skin, if inhaled, if swallowed)

Precautionary statements (CLP) : P260 - Do not breathe dust, fume, gas, mist, spray, vapors
P264 - Wash hands, forearms and face 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 eye protection, protective clothing, protective gloves, face protection
P301+P312 - IF SWALLOWED: Call a doctor if you feel unwell
P302+P352 - IF ON SKIN: Wash with plenty of water
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS08 GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H302+H312 - Harmful if swallowed or in contact with skin
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer (Dermal, Inhalation, oral)
H373 - May cause damage to organs (blood, central nervous system, liver, respiratory system) through prolonged or repeated exposure (Dermal, Inhalation, oral)

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust, fume, gas, mist, spray, vapors
P261 - Avoid breathing dust, fume, gas, mist, spray, vapors
P264 - Wash hands, forearms and face 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 eye protection, face protection, protective clothing, protective gloves
P301+P312 - If swallowed: Call a doctor if you feel unwell
P302+P352 - If on skin: Wash with plenty of water
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
P308+P313 - If exposed or concerned: Get medical advice/attention
P312 - Call a doctor if you feel unwell
P314 - Get medical advice/attention if you feel unwell
P321 - Specific treatment (see Hazard pictograms (CLP) 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 - Take off contaminated clothing and wash it before reuse
P362+P364 - Take off contaminated clothing and wash it before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Directive 67/548/EEC
METHYLENE CHLORIDE-D2 (D, 99.8%)	(CAS No) 1665-00-5 (EC No) 216-776-0 (Unlabeled) (EC Index No) 602-004-00-3 (Unlabeled) (REACH-no) 01-2119480404-41	99.927	Xi; R36/37/38 Carc.Cat.3; R40 T; R48/25 R67 Xn; R21/22
N-NITROSOPYRROLIDINE (D8, 98%)	(CAS No) 930-55-2 (Unlabeled) (EC No) 213-218-8 (Unlabeled)	0.073	Carc.Cat.3; R40 Xn; R22

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
METHYLENE CHLORIDE-D2 (D, 99.8%)	(CAS No) 1665-00-5 (EC No) 216-776-0 (Unlabeled) (EC Index No) 602-004-00-3 (Unlabeled) (REACH-no) 01-2119480404-41	99.927	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H336 STOT SE 3, H335 STOT RE 2, H373
N-NITROSOPYRROLIDINE (D8, 98%)	(CAS No) 930-55-2 (Unlabeled) (EC No) 213-218-8 (Unlabeled)	0.073	Acute Tox. 4 (Oral), H302 Carc. 2, H351

Name	Product identifier	%	GHS-US classification
METHYLENE CHLORIDE-D2 (D, 99.8%)	(CAS No) 1665-00-5	99.927	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 STOT SE 3, H336 STOT SE 3, H335 STOT RE 2, H373
N-NITROSOPYRROLIDINE (D8, 98%)	(CAS No) 930-55-2 (Unlabeled)	0.073	Acute Tox. 4 (Oral), H302 Carc. 2, H351

Full text of R- and H- phrases: see section 16

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. Suspected of causing cancer (if inhaled, in contact with skin, if swallowed).

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 off with soap and plenty of water. Consult a physician. Immediately call a poison center or doctor/physician. Specific measures (see Hazard pictograms (CLP) on this label). Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

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 : Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	:	Causes damage to organs (liver, pancreas, kidneys, central nervous system) (in contact with skin, if inhaled, if swallowed).
Symptoms/injuries after inhalation	:	May cause respiratory irritation. May be harmful if inhaled. May cause drowsiness or dizziness.
Symptoms/injuries after skin contact	:	Harmful if absorbed through skin. Causes skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.
Symptoms/injuries after eye contact	:	Causes serious eye irritation.
Symptoms/injuries after ingestion	:	Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions	:	Do not enter fire area without proper protective equipment, including respiratory protection. Wear self contained breathing apparatus for fire fighting if necessary.
Protection during firefighting	:	Wear respiratory protection. Do not enter fire area without proper protective equipment, including respiratory protection.

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. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe area.

6.1.2. For emergency responders

Protective equipment	:	Avoid breathing Dust, vapors.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Avoid discharge to atmosphere.

6.3. Methods and material for containment and cleaning up

For containment	:	Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Precautions for safe handling	:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust, spray, gas, mist, vapors. Use only outdoors or in a well-ventilated area.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Store in a well-ventilated place. Keep container tightly closed.
Storage conditions	:	Store refrigerated (-5 C to 5 C). Protect from light.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	50.00000000 ppm Central Nervous System impairment, Carboxyhemoglobinemia substances (see BEI)
USA OSHA	OSHA PEL (STEL) (ppm)	125 ppm

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	50.00000000 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	Remark (ACGIH)	Central Nervous system impairment. Carboxyhemoglobinemia. Substances for which there is a Biological Exposure Index or Indices (see BEI section). Confirmed animal carcinogen with unknown relevance to humans. Potential Occupational Carcinogen See Appendix A.
USA OSHA	OSHA PEL (STEL) (mg/m³)	435 mg/m³ Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107) see section 5202
USA OSHA	OSHA PEL (STEL) (ppm)	125 ppm Basis: OSHA Specifically Regulated Chemicals/Carcinogens California permissible exposure limits for chemical contaminants (Title 8, Article 107) see section 5202
USA OSHA	OSHA PEL (Ceiling) (mg/m³)	87 mg/m³ Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107) see section 5202
USA OSHA	OSHA PEL (Ceiling) (ppm)	25 ppm Basis: OSHA Specifically Regulated Chemicals/Carcinogens California permissible exposure limits for chemical contaminants (Title 8, Article 107) see section 5202
USA OSHA	Remark (OSHA)	Substance listed; for mor information see OSHA document 1910.1052. See Table Z-2. This section applies to all occupational exposures to methylene chloride (MC). Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 8.9 g/mole. OSHA Specifically regulated carcinogen.

8.2. Exposure controls

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

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 : Wear suitable protective clothing. Wear suitable protective clothing.

Respiratory protection : When appropriate, use NIOSH/CEN approved respirator. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture.

Physical state : Liquid

Appearance : Liquid

Molecular mass : 86.95 g/mol (Labeled)

Color	:	Colorless
Odor	:	Sweet, penetrating, ether-like odor
Odor threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Melting point	:	-97 °C (-143 °F)
Freezing point	:	No data available
Boiling point	:	39.8 - 40 °C (103.6 - 104 °F)
Flash point	:	No data available
Auto-ignition temperature	:	556.1 °C (1,033.0 °F)
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	470.9 hPa (353.2 mmHg) at 20.0 °C (68.0 °F)
Relative vapor density at 20 °C	:	2.93 - (Air = 1.0)
Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosion limits	:	12 - 19 % (V)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Heat, flames and sparks. Exposure to sunlight.

10.5. Incompatible materials

Alkali metals, Aluminum, Strong oxidizing agents, Bases, Amines, Magnesium. Strong acids and strong bases, Vinyl compounds.

10.6. Hazardous decomposition products

Formed under fire conditions. - Carbon oxides, Hydrogen chloride gas.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Dermal: Harmful in contact with skin.

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2	
LD50 oral rat	1600 mg/kg
LC50 inhalation rat (mg/l)	52000 mg/m³
ATE CLP (oral)	1600.000 mg/kg body weight
ATE CLP (dermal)	1100.000 mg/kg body weight
ATE CLP (vapors)	52.000 mg/l/4h
ATE CLP (dust, mist)	52.000 mg/l/4h

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg (OECD Test Guideline 402)
LC50 inhalation rat (mg/l)	52000 mg/m³

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)	
ATE CLP (oral)	500.000 mg/kg body weight
ATE CLP (dermal)	1100.000 mg/kg body weight
ATE CLP (vapors)	52.000 mg/l/4h
ATE CLP (dust, mist)	52.000 mg/l/4h

N-NITROSOPYRROLIDINE (D8, 98%) (930-55-2 (Unlabeled))	
LD50 oral rat	900 mg/kg
ATE CLP (oral)	900.000 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.
Skin - rabbit - Skin irritation - 24 h - Draize Test

Serious eye damage/irritation : Causes serious eye irritation.
Eyes - rabbit - Mild eye irritation - 24 h - Draize Test

Respiratory or skin sensitization : Not available

Germ cell mutagenicity : Genotoxicity in vivo - rat - Oral : DNA damage

Carcinogenicity : Suspected of causing cancer (in contact with skin, if inhaled, if swallowed).

Reproductive toxicity : Not available

Specific target organ toxicity – single exposure : May cause drowsiness or dizziness. May cause respiratory irritation.
May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity – repeated exposure : May cause damage to organs (liver, pancreas, central nervous system, blood, heart, kidneys) through prolonged or repeated exposure (in contact with skin, if inhaled, if swallowed).
Inhalation/Oral - May cause damage to organs through repeated exposure.

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Dichloromethane is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood. Acts as a simple asphyxiant by displacing air, anesthetic effects. Difficulty in breathing, Headache, Dizziness, Prolonged or repeated contact with skin may cause defatting, Dermititis. Contact with skin can cause Redness, Blurred vision, Provokes tears. Effects due to ingestion may include Gastrointestinal discomfort, Central nervous system depression, Paresthesia, Drowsiness, Convulsions, Conjunctivitis, Pulmonary edema. Effects may be delayed. Irregular breathing, Stomach/intestinal disorders, Nausea, Vomiting, Increased liver enzymes, Weakness, Heavy or prolonged skin exposure may result in absorption of harmful amounts of material, Abdominal pain. Stomach - Irregularities - Based on Human Evidence. 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. Harmful if swallowed. Harmful in contact with skin.

IARC group : 2B

Symptoms/injuries after inhalation : May cause respiratory irritation. May be harmful if inhaled. May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : Harmful if absorbed through skin. Causes skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2	
LC50 fish 1	193 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 Daphnia 1	1682 mg/l Daphnia magna (Water flea) - 48 h
NOEC (chronic)	130 mg/l Cyprinodon variegatus (sheepshead minnow) - 96 h

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)	
LC50 fish 1	193 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 Daphnia 1	1682 mg/l Daphnia magna (Water flea) - 48 h
NOEC (chronic)	130 mg/l Cyprinodon variegatus (sheepshead minnow) - 96 h

12.2. Persistence and degradability

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2	
Persistence and degradability	Result: < 30.0 % - Not readily biodegradable.

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)	
Biodegradation	< 26 % - Not readily biodegradable. (OECD Test Guideline 301C)

N-NITROSOPYRROLIDINE (D8, 98%) (930-55-2 (Unlabeled))	
Persistence and degradability	Not available.

12.3. Bioaccumulative potential

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2	
Bioaccumulative potential	Not available.

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)	
Log Pow	1.25
Bioaccumulative potential	Does not accumulate in organisms.

N-NITROSOPYRROLIDINE (D8, 98%) (930-55-2 (Unlabeled))	
Bioaccumulative potential	Not available.

12.4. Mobility in soil

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2	
Ecology - soil	Not available.

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)	
Ecology - soil	Not available.

N-NITROSOPYRROLIDINE (D8, 98%) (930-55-2 (Unlabeled))	
Ecology - soil	Not available.

12.5. Results of PBT and vPvB assessment

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)
PBT: not relevant – no registration required

12.6. Other adverse effects

Other adverse effects : Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment 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 ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No.(DOT) : 1593

DOT NA no. UN1593

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Dichloromethane

Class (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Hazard labels (DOT) : 6.1 - Poison

Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102)	:	IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). IP8 - Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31HZ1) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55 C (131 F). N36 - Aluminum or aluminum alloy construction materials are permitted only for halogenated hydrocarbons that will not react with aluminum. T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	153
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	203
DOT Packaging Bulk (49 CFR 173.xxx)	:	241
DOT RQ	:	1000 lbs
Marine pollutant	:	No

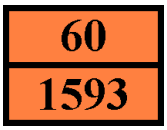
14.3. Additional information

Other information : No supplementary information available.

Overland transport

Packing group (ADR)	:	III
Class (ADR)	:	6.1 - Toxic substances
Hazard identification number (Kemler No.)	:	60
Classification code (ADR)	:	T1
Hazard labels (ADR)	:	6.1 - Toxic substances

Orange plates :



Tunnel restriction code (ADR)	:	E
Limited quantities (ADR)		5l
EAC	:	2Z
Excepted quantities (ADR)	:	E1

Transport by sea

DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
MFAG-No	:	160

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	220 L

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. 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

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2	
SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313;

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

N-NITROSOPYRROLIDINE (D8, 98%) (930-55-2 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313

15.2. International regulations

CANADA

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2
Listed on the Canadian DSL (Domestic Substances List)

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)
Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

N-NITROSOPYRROLIDINE (D8, 98%) 1 MG/ML IN METHYLENE CHLORIDE-D2	
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

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

N-NITROSOPYRROLIDINE (D8, 98%) (930-55-2 (Unlabeled))				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

METHYLENE CHLORIDE-D2 (D, 99.8%) (1665-00-5)

State or local regulations

U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - New Jersey - Right to Know Hazardous Substance List

N-NITROSOPYRROLIDINE (D8, 98%) (930-55-2 (Unlabeled))

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

Other information : 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.

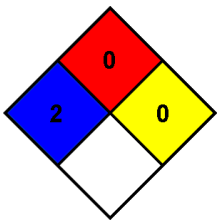
Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Carc. 2	Carcinogenicity Category 2
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure
R21/22	Harmful in contact with skin and if swallowed
R22	Harmful if swallowed
R36/37/38	Irritating to eyes, respiratory system and skin
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R40	Limited evidence of a carcinogenic effect
R48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
R67	Vapors may cause drowsiness and dizziness
T	Toxic
Xi	Irritant
Xn	Harmful

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS III Rating

Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 0 Minimal Hazard
Physical	: 0 Minimal Hazard

CIL Mixture SDS

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