

# Methyl Mercaptan (Compressed)

## Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 05/25/2017

Version: 1.0

### SECTION 1: Identification

#### 1.1. Product identifier

|                |                                                                      |
|----------------|----------------------------------------------------------------------|
| Product form   | : Substance                                                          |
| Substance name | : Methyl Mercaptan (Compressed)                                      |
| CAS-No.        | : 74-93-1                                                            |
| Product code   | : CA-1001-05296                                                      |
| Formula        | : CH <sub>4</sub> S                                                  |
| Synonyms       | : Methylmercaptan / Methanethiol / Thiomethanol / Thiomethyl alcohol |

#### 1.2. Recommended use and restrictions on use

|                                   |           |
|-----------------------------------|-----------|
| Recommended uses and restrictions | : Various |
|-----------------------------------|-----------|

#### 1.3. Supplier

Air Liquide Canada Inc.  
1250, René Lévesque West Blvd. Suite 1700  
H3B 5E6 Montreal, QC - Canada  
T 1-800-817-7697  
[www.airliquide.ca](http://www.airliquide.ca)

#### 1.4. Emergency telephone number

|                  |                |
|------------------|----------------|
| Emergency number | : 514-878-1667 |
|------------------|----------------|

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

##### Classification (GHS-CA)

|                                                                   |      |
|-------------------------------------------------------------------|------|
| Flammable gases, Category 1                                       | H220 |
| Gases under pressure : Liquefied gas                              | H280 |
| Acute toxicity (inhalation:gas) Category 3                        | H331 |
| Hazardous to the aquatic environment — Acute Hazard, Category 1   | H400 |
| Hazardous to the aquatic environment — Chronic Hazard, Category 1 | H410 |
| Full text of H statements : see section 16                        |      |

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-CA labelling

Hazard pictograms (GHS-CA)



Signal word (GHS-CA)

: Danger

Hazard statements (GHS-CA)

: H280 - Contains gas under pressure; may explode if heated  
H220 - Extremely flammable gas  
H331 - Toxic if inhaled  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H401 - Toxic to aquatic life

Precautionary statements (GHS-CA)

: P381 - In case of leakage, eliminate all ignition sources  
P377 - Leaking gas fire: Do not extinguish unless leak can be stopped safely  
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.  
P403 - Store in a well-ventilated place  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P391 - Collect spillage  
P410+P403 - Protect from sunlight. Store in a well-ventilated place  
P405 - Store locked up  
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P311 - Call a POISON CENTER or doctor

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P321 - Specific treatment (see supplemental first aid instruction on this label)  
P271 - Use only outdoors or in a well-ventilated area  
P273 - Avoid release to the environment  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

### 2.3. Other hazards

Other hazards not contributing to the classification : None.

### 2.4. Unknown acute toxicity (GHS-CA)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

| Name                                                | Chemical name/Synonyms                                                | Product identifier | %   | Classification (GHS-CA)                                                                                                                 |
|-----------------------------------------------------|-----------------------------------------------------------------------|--------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------|
| Methyl Mercaptan (Compressed)<br>(Main constituent) | Methylmercaptan / Methanethiol /<br>Thiomethanol / Thiomethyl alcohol | (CAS-No.) 74-93-1  | 100 | Flam. Gas 1, H220<br>Press. Gas (Liq.), H280<br>Acute Tox. 3 (Inhalation:gas), H331<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |

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 after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.

First-aid measures after skin contact : For liquid spillage - flush with water for at least 15 minutes.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects (acute and delayed)

Most important symptoms and effects, both acute and delayed : May cause headache, nausea and irritation of respiratory tract. Refer to section 11.

### 4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Obtain medical assistance.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

No additional information available

### 5.2. Unsuitable extinguishing media

No additional information available

### 5.3. Specific hazards arising from the hazardous product

Hazardous combustion products : If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Carbon monoxide. Sulphur dioxide.

### 5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Exposure to fire may cause containers to rupture/explode.

Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.

Special protective equipment for fire fighters : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. Standard EN 943-2: Protective clothing against liquid and gaseous chemicals, aerosols and solid particles. Gas-tight chemical protective suits for emergency teams. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Try to stop release. Evacuate area. Monitor concentration of released product. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Eliminate ignition sources. Ensure adequate air ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
- Personal Precautions, Protective Equipment and Emergency Procedures : EVACUATE ALL PERSONNEL FROM AFFECTED AREA. Use appropriate protective equipment. If leak is on user's equipment, be certain to purge piping before attempting repairs. If leak is on a container or container valve contact the closest Air Liquide Canada location.

#### 6.2. Methods and materials for containment and cleaning up

- Methods and material for containment and cleaning up : Ventilate area. Keep area evacuated and free from ignition sources until any spilled liquid has evaporated (ground free from frost).

#### 6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Safe use of the product : The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not smoke while handling product. Avoid exposure, obtain special instructions before use. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Installation of a cross purge assembly between the cylinder and the regulator is recommended. Avoid suck back of water, acid and alkalis. Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment. Purge air from system before introducing gas. Take precautionary measures against static discharge. Keep away from ignition sources (including static discharges). Consider the use of only non-sparking tools.
- Safe handling of the gas receptacle : Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Conditions for safe storage, including any incompatibilities : Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials. Segregate from oxidant gases and other oxidants in store. All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

| Methyl Mercaptan (Compressed) (74-93-1) |                            |            |
|-----------------------------------------|----------------------------|------------|
| USA - ACGIH                             | ACGIH TWA (ppm)            | 0.5 ppm    |
| USA - OSHA                              | OSHA PEL (Ceiling) (mg/m³) | 20 mg/m³   |
| USA - OSHA                              | OSHA PEL (Ceiling) (ppm)   | 10 ppm     |
| Canada (Quebec)                         | VEMP (mg/m³)               | 0.98 mg/m³ |
| Canada (Quebec)                         | VEMP (ppm)                 | 0.5 ppm    |

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|--------------------------|----------------------------------|------------------------|
| Alberta                  | OEL TWA (mg/m <sup>3</sup> )     | 1 mg/m <sup>3</sup>    |
| Alberta                  | OEL TWA (ppm)                    | 0.5 ppm                |
| British Columbia         | OEL TWA (ppm)                    | 0.5 ppm                |
| Manitoba                 | OEL TWA (ppm)                    | 0.5 ppm                |
| New Brunswick            | OEL TWA (mg/m <sup>3</sup> )     | 0.98 mg/m <sup>3</sup> |
| New Brunswick            | OEL TWA (ppm)                    | 0.5 ppm                |
| New Foundland & Labrador | OEL TWA (ppm)                    | 0.5 ppm                |
| Nova Scotia              | OEL TWA (ppm)                    | 0.5 ppm                |
| Nunavut                  | OEL STEL (ppm)                   | 1.5 ppm                |
| Nunavut                  | OEL TWA (ppm)                    | 0.5 ppm                |
| Northwest Territories    | OEL STEL (ppm)                   | 1.5 ppm                |
| Northwest Territories    | OEL TWA (ppm)                    | 0.5 ppm                |
| Ontario                  | OEL TWA (ppm)                    | 0.5 ppm                |
| Prince Edward Island     | OEL TWA (ppm)                    | 0.5 ppm                |
| Saskatchewan             | OEL STEL (ppm)                   | 1.5 ppm                |
| Saskatchewan             | OEL TWA (ppm)                    | 0.5 ppm                |
| Yukon                    | OEL Ceiling (mg/m <sup>3</sup> ) | 5.9 mg/m <sup>3</sup>  |
| Yukon                    | OEL Ceiling (ppm)                | 3 ppm                  |

### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Product to be handled in a closed system. Preferably use permanent leak-tight installations (e.g. welded pipes). Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available). Alarm detectors should be used when toxic gases may be released. Consider the use of a work permit system e.g. for maintenance activities.
- Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Gloves. Safety glasses. Protective clothing. Safety shoes.

#### Hand protection:

Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk. Wear chemically resistant protective gloves. Standard EN 374 - Protective gloves against chemicals. Permeation time: minimum >30min short term exposure: material / thickness / [mm] . Nitrile rubber (NBR). Consult glove manufacturer's product information on material suitability and material thickness. The breakthrough time of the selected gloves must be greater than the intended use period.

#### Eye protection:

Wear safety glasses with side shields. Wear goggles when transfilling or breaking transfer connections. Standard EN 166 - Personal eye-protection - specifications

#### Respiratory protection:

Gas filters do not protect against oxygen deficiency. Keep self contained breathing apparatus readily available for emergency use. Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known. Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers. Recommended: Filter AX (brown). Consult respiratory device supplier's product information for the selection of the appropriate device. Standard EN 14387 - Gas filter(s), combined filter(s) and full face mask - EN 136. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.



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### Thermal hazard protection:

None necessary.

### Other information:

Consider the use of flame resistant anti-static safety clothing. Standard EN ISO 14116 - Limited flame spread materials. Standard EN ISO 1149-5 - Protective clothing: Electrostatic properties. Wear safety shoes while handling containers. Standard EN ISO 20345 - Personal protective equipment - Safety footwear. Keep suitable chemically resistant protective clothing readily available for emergency use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                            |                                                                                                          |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Physical state                             | : Gas                                                                                                    |
| Appearance                                 | : Colorless liquid at low temperature or under pressure. Colorless gas at room temperature and pressure. |
| Colour                                     | : Colourless.                                                                                            |
| Odour                                      | : Extremely disagreeable. Odour can persist.                                                             |
| Odour threshold                            | : No data available                                                                                      |
| pH                                         | : Not applicable.                                                                                        |
| Relative evaporation rate (butylacetate=1) | : No data available                                                                                      |
| Relative evaporation rate (ether=1)        | : Not applicable for gases and gas mixtures.                                                             |
| Molecular mass                             | : 48.11 g/mol                                                                                            |
| Melting point                              | : -123 °C                                                                                                |
| Freezing point                             | : -123 °C                                                                                                |
| Boiling point                              | : 6.950000000 °C                                                                                         |
| Flash point                                | : Not applicable for gases and gas mixtures.                                                             |
| Critical temperature                       | : 197.85 °C                                                                                              |
| Auto-ignition temperature                  | : 360 °C                                                                                                 |
| Decomposition temperature                  | : No data available                                                                                      |
| Flammability (solid, gas)                  | : No data available                                                                                      |
| Vapour pressure                            | : 797.7854712686 mbar                                                                                    |
| Vapour pressure at 50 °C                   | : No data available                                                                                      |
| Critical pressure                          | : 7230 kPa                                                                                               |
| Relative vapour density at 20 °C           | : 1.66                                                                                                   |
| Relative density                           | : 0.89                                                                                                   |
| Density                                    | : 0.87 g/cm <sup>3</sup> (at 20 °C)                                                                      |
| Relative gas density                       | : 1.6                                                                                                    |
| Solubility                                 | : Water: 23300 mg/l                                                                                      |
| Log Pow                                    | : Not known                                                                                              |
| Viscosity, kinematic                       | : Not applicable.                                                                                        |
| Viscosity, dynamic                         | : Not applicable.                                                                                        |
| Explosive properties                       | : Not applicable.                                                                                        |
| Oxidising properties                       | : None.                                                                                                  |
| Explosive limits                           | : 4.1 - 21 vol %                                                                                         |

### 9.2. Other information

|                        |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Gas group              | : Press. Gas (Liq.)                                                                                     |
| Additional information | : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

|                                    |                                                                                   |
|------------------------------------|-----------------------------------------------------------------------------------|
| Reactivity                         | : No reactivity hazard other than the effects described in sub-sections below.    |
| Chemical stability                 | : Stable under normal conditions.                                                 |
| Possibility of hazardous reactions | : May react violently with oxidants. Can form explosive mixture with air.         |
| Conditions to avoid                | : Keep away from heat/sparks/open flames/hot surfaces. – No smoking.              |
| Incompatible materials             | : Air, Oxidisers. For additional information on compatibility refer to ISO 11114. |

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Hazardous decomposition products : Under normal conditions of storage and use hazardous decomposition products should not be produced.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Inhalation:gas: Toxic if inhaled.

| Methyl Mercaptan (Compressed) ( f )74-93-1 |                               |
|--------------------------------------------|-------------------------------|
| LD50 oral rat                              | 109.6 mg/kg                   |
| LD50 dermal rat                            | > 84.8 mg/kg                  |
| LC50 inhalation rat (ppm)                  | 675 ppm/4h                    |
| ATE CA (oral)                              | 109.60000000 mg/kg bodyweight |
| ATE CA (gases)                             | 675.00000000 ppmv/4h          |

Skin corrosion/irritation : Not classified  
pH: Not applicable.  
Serious eye damage/irritation : Not classified  
pH: Not applicable.  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified  
Reproductive toxicity : Not classified  
STOT-single exposure : Not classified  
STOT-repeated exposure : Not classified  
Aspiration hazard : Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

| Methyl Mercaptan (Compressed) (74-93-1) |                  |
|-----------------------------------------|------------------|
| LC50-96 h - fish [mg/l]                 | 1.8 mg/l         |
| EC50 48h - Daphnia magna [mg/l]         | 1.32 - 2.46 mg/l |
| EC50 72h Algae [mg/l]                   | 6.3 - 15 mg/l    |

#### 12.2. Persistence and degradability

| Methyl Mercaptan (Compressed) (74-93-1) |                                                              |
|-----------------------------------------|--------------------------------------------------------------|
| Persistence and degradability           | The substance is readily biodegradable. Unlikely to persist. |

#### 12.3. Bioaccumulative potential

| Methyl Mercaptan (Compressed) (74-93-1) |                    |
|-----------------------------------------|--------------------|
| Log Pow                                 | Not known          |
| Bioaccumulative potential               | No data available. |

#### 12.4. Mobility in soil

| Methyl Mercaptan (Compressed) (74-93-1) |                                                                                             |
|-----------------------------------------|---------------------------------------------------------------------------------------------|
| Log Pow                                 | Not known                                                                                   |
| Ecology - soil                          | Because of its high volatility, the product is unlikely to cause ground or water pollution. |

#### 12.5. Other adverse effects

Effect on global warming : No known effects from this product.  
Effect on ozone layer : None.

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### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regional legislation (waste) | : U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261. U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics.                                                                                                                                                                                      |
| Waste treatment methods      | : Must not be discharged to atmosphere. Toxic and corrosive gases formed during combustion should be scrubbed before discharge to atmosphere. Ensure that the emission levels from local regulations or operating permits are not exceeded. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <a href="http://www.eiga.org">http://www.eiga.org</a> for more guidance on suitable disposal methods. |
| Additional information       | : None.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| List of hazardous wastes     | : 16 05 04 *: Gases in pressure containers (including halons) containing dangerous substances.                                                                                                                                                                                                                                                                                                                                   |

### SECTION 14: Transport information

#### 14.1. Basic shipping description

In accordance with TDG

#### Transportation of Dangerous Goods

|                                |                                      |
|--------------------------------|--------------------------------------|
| UN-No. (TDG)                   | : UN1064                             |
| TDG Primary Hazard Classes     | : 2.3 - Class 2.3 - Toxic Gas.       |
| TDG Subsidiary Classes         | : 2.1                                |
| Transport Document Description | : UN1064 METHYL MERCAPTAN, 2.3 (2.1) |
| Proper Shipping Name           | : METHYL MERCAPTAN                   |

|                     |                                              |
|---------------------|----------------------------------------------|
| Hazard labels (TDG) | : 2.3 - Toxic gases<br>2.1 - Flammable gases |
|---------------------|----------------------------------------------|



|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TDG Special Provisions                                                      | : 23 - (1) A consignor of these dangerous goods must include, except for UN1005, ANHYDROUS AMMONIA, the words "toxic by inhalation" or "toxic — inhalation hazard" or "toxique par inhalation" or "toxicité par inhalation" in the following places, unless the words are already part of the shipping name: (a) on a shipping document, immediately after the description of the dangerous goods; (b) on a small means of containment, next to the shipping name of the dangerous goods; and (c) on a large means of containment, next to the placard for the primary class of the dangerous goods or the placard for the subsidiary class, if any. For example, the notation on a shipping document would be "UN1935, CYANIDE SOLUTION, N.O.S, Class 6.1, PG I, toxic by inhalation". (2) This special provision does not apply to a person who transports these dangerous goods in accordance with an exemption set out in sections 1.15, 1.17 or 1.17.1 of Part 1 (Coming Into Force, Repeal, Interpretation, General Provisions and Special Cases). (3) A consignor of UN1005, ANHYDROUS AMMONIA, must include the words "inhalation hazard" or "dangereux par inhalation": (a) on a shipping document, immediately after the shipping name of the dangerous goods; and (b) on a small means of containment, next to the shipping name of the dangerous goods. When UN1005, ANHYDROUS AMMONIA, is contained in a large means of containment on which is affixed the anhydrous ammonia placard, the words "Anhydrous Ammonia, Inhalation Hazard" or "Ammoniac anhydre, dangereux par inhalation" must be displayed next to the placard in accordance with paragraph 4.18.2(b). SOR/2014-306 |
| ERAP Index                                                                  | : 500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Explosive Limit and Limited Quantity Index                                  | : 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Passenger Carrying Ship Index                                               | : Forbidden                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Excepted quantities (TDG)                                                   | : E0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index | : Forbidden                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



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Marine pollutant : Yes (IMDG only)



### 14.2. Transport information/DOT - USA

#### Department of Transport

DOT NA no. : UN1064

UN-No.(DOT) : 1064

Transport Document Description : UN1064 Methyl mercaptan, 2.3 (2.1)

Proper Shipping Name (DOT) : Methyl mercaptan  
Methanethiol

Contains Statement Field Selection (DOT) :

Class (DOT) : 2.3 - Class 2.3 - Poisonous gas 49 CFR 173.115

Division (DOT) : 2.3

Hazard labels (DOT) : 2.3 - Poison gas  
2.1 - Flammable gas



Dangerous for the environment : Yes

Marine pollutant : Yes



DOT Special Provisions (49 CFR 172.102) : 3 - This material is poisonous by inhalation (see 171.8 of this subchapter) in Hazard Zone C (see 173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.  
B7 - Safety relief devices are not authorized on multi-unit tank car tanks. Openings for safety relief devices on multi-unit tank car tanks shall be plugged or blank flanged.  
B9 - Bottom outlets are not authorized.  
B14 - Each bulk packaging, except a tank car or a multi-unit-tank car tank, must be insulated with an insulating material so that the overall thermal conductance at 15.5 C (60 F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials must not promote corrosion to steel when wet.  
N89 - When steel UN pressure receptacles are used, only those bearing the "H" mark are authorized.  
T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx) : None

DOT Packaging Non Bulk (49 CFR 173.xxx) : 304

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : Forbidden

DOT Vessel Stowage Location : D - The material must be stowed "on deck only" 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, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.



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|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOT Vessel Stowage Other              | : 40 - Stow "clear of living quarters"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Emergency Response Guide (ERG) Number | : 117                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Special transport precautions         | : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:<br>- Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted. |
| Other information                     | : No supplementary information available.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

### 14.3. Air and sea transport

#### IMDG

|                                       |                                                                                                                                                           |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| UN-No. (IMDG)                         | : 1064                                                                                                                                                    |
| Proper Shipping Name (IMDG)           | : METHYL MERCAPTAN                                                                                                                                        |
| Transport Document Description (IMDG) | : UN 1064 METHYL MERCAPTAN, 2.3 (2.1), MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS                                                                         |
| Class (IMDG)                          | : 2 - Gases                                                                                                                                               |
| MFAG-No                               | : 117                                                                                                                                                     |
| Ship Safety Act                       | : Gases under pressure/Gases toxic under pressure(Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)       |
| Port Regulation Law                   | : Hazardous materials/High pressure gas (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods) |

#### IATA

|                                       |                                                                                                                                           |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| UN-No. (IATA)                         | : 1064                                                                                                                                    |
| Proper Shipping Name (IATA)           | : Methyl mercaptan                                                                                                                        |
| Transport Document Description (IATA) | : UN 1064 Methyl mercaptan, 2.3 (2.1), ENVIRONMENTALLY HAZARDOUS                                                                          |
| Class (IATA)                          | : 2                                                                                                                                       |
| Civil Aeronautics Law                 | : Gases under pressure/Gases toxic under pressure(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations) |

## SECTION 15: Regulatory information

### 15.1. National regulations

#### Methyl Mercaptan (Compressed) (74-93-1)

Listed on the Canadian DSL (Domestic Substances List)

### 15.2. International regulations

#### Methyl Mercaptan (Compressed) (74-93-1)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Poisonous and Deleterious Substances Control Law  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

## SECTION 16: Other information

|                   |                                                                                                                                                       |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of issue     | : 05/25/2017                                                                                                                                          |
| Training advice   | : Users of breathing apparatus must be trained. Ensure operators understand the flammability hazard. Ensure operators understand the toxicity hazard. |
| Other information | : This Safety Data Sheet has been established in accordance with the applicable European Union legislation.                                           |

Full text of H-statements:

|      |                                                    |
|------|----------------------------------------------------|
| H220 | Extremely flammable gas                            |
| H280 | Contains gas under pressure; may explode if heated |
| H331 | Toxic if inhaled                                   |

# Methyl Mercaptan (Compressed)

## Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

|      |                                                      |
|------|------------------------------------------------------|
| H400 | Very toxic to aquatic life                           |
| H410 | Very toxic to aquatic life with long lasting effects |

SDS Canada (GHS)

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