# Dimethyl Sulfide (0.00001% - 4.20%) in Nitrogen

## Safety Data Sheet

**Date of issue:** 08/25/2015  
**Version:** 2.0

### SECTION 1: Identification

#### 1.1. Identification

| Product form | : | Mixture |
| Product name | : | Dimethyl Sulfide (0.00001% - 4.20%) in Nitrogen |
| Product code | : | SG-2002-02962 |

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

| Use of the substance/mixture | : | Test gas/Calibration gas. |

#### 1.3. Details of the supplier of the safety data sheet

- **Air Liquide**  
  2700 Post Oak Boulevard  
  Houston, TX 77056 - USA  
  T 1-800-819-1704  
  [www.us.airliquide.com](http://www.us.airliquide.com)

#### 1.4. Emergency telephone number

| Emergency number | : | CHEMTREC: 1-800-424-9300 |

### SECTION 2: Hazard(s) identification

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

**Classification (GHS-US)**  
Compressed gas  
H280 - Contains gas under pressure; may explode if heated

#### 2.2. Label elements

**GHS-US labeling**

| Hazard pictograms (GHS-US) | : | ![Hazard pictograms](image) |

| Signal word (GHS-US) | : | Warning |
| Hazard statements (GHS-US) | : | H280 - Contains gas under pressure; may explode if heated  
OSHA-H01 - May displace oxygen and cause rapid suffocation  
CGA-HG16 - Extended exposure to gas reduces the ability to smell sulfides. |

| Precautionary statements (GHS-US) | : | P202 - Do not handle until all safety precautions have been read and understood  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear eye protection, face protection, protective gloves, protective clothing  
P304+P313 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P403 - Store in a well-ventilated place  
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations  
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)  
CGA-PG05 - Use a back flow preventive device in the piping  
CGA-PG06 - Close valve after each use and when empty  
CGA-PG10 - Use only with equipment rated for cylinder pressure  
CGA-PG14 - Approach suspected leak area with caution  
CGA-PG21 - Open valve slowly  
CGA-PG29 - Do not depend on odor to detect presence of gas |

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable
SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>(CAS No) 7727-37-9</td>
<td>95.8 - 99.99999</td>
<td>Compressed gas, H280</td>
</tr>
<tr>
<td>Dimethyl sulfide</td>
<td>(CAS No) 75-18-3</td>
<td>0.00001 - 4.2</td>
<td>Flam. Liq. 2, H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3 (Oral), H301</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A, H319</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Adverse effects not expected from this product.

First-aid measures after eye contact: Adverse effects not expected from this product.

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

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

Symptoms/injuries after inhalation: May displace oxygen and cause rapid suffocation.

Symptoms/injuries after skin contact: Adverse effects not expected from this product.

Symptoms/injuries after eye contact: Adverse effects not expected from this product.

Symptoms/injuries after ingestion: Ingestion is not considered a potential route of exposure.

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

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media: Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

Fire hazard: The product is not flammable.

Explosion hazard: Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity: None known.

5.3. Advice for firefighters

Firefighting instructions: In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.

Protection during firefighting: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. 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

General measures: Ensure adequate ventilation.

6.1.1. For non-emergency personnel

Protective equipment: Wear protective equipment consistent with the site emergency plan.

6.1.2. For emergency responders

Protective equipment: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for firefighters. Equip cleanup crew with proper protection.

Emergency procedures: Evacuate and limit access. Ventilate area.

6.2. Environmental precautions

Try to stop release if safe to do so.

6.3. Methods and material for containment and cleaning up

For containment: Try to stop release if safe to do so.

Methods for cleaning up: Dispose of this material and its container in accordance with local regulations.

6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed: Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure. Close valve after each use and when empty.

Precautions for safe handling: Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.

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

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Comply with applicable regulations.

Storage conditions: Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage. Store in well ventilated area.

Incompatible products: None known.

Incompatible materials: None known.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Dimethyl sulfide (75-18-3)</th>
<th>ACGIH</th>
<th>ACGIH TWA (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls: Ensure exposure is below occupational exposure limits. Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Oxygen detectors should be used when asphyxiating gases may be released. Consider work permit system e.g. for maintenance activities.


Skin and body protection: Wear suitable protective clothing, e.g. - lab coats, coveralls or flame resistant clothing.

Respiratory protection: None necessary during normal and routine operations. See Sections 5 & 6.

Thermal hazard protection: None necessary during normal and routine operations.

Environmental exposure controls: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.


SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear, colorless.</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Rotten eggs. Sulfide-like</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Dimethyl Sulfide (0.00001% - 4.20%) in Nitrogen
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Freezing point : No data available
Boiling point : No data available
Flash point : Not applicable - not flammable
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : See Section 2.1 and 2.2
Explosion limits : Not applicable - not flammable
Explosive properties : Not applicable - not flammable.
Oxidizing properties : None.
Vapor pressure : No data available
Relative density : No data available
Relative vapor density at 20 °C : No data available
Molecular mass : Not applicable for gas-mixtures.
Relative gas density : Similar to air
Solubility : No data available
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
None known.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
None known.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
None known.

10.6. 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 : Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>Route of exposure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen (7727-37-9)</td>
<td>LC50 inhalation rat (ppm)</td>
<td>820000 ppm/4h</td>
</tr>
<tr>
<td>Dimethyl sulfide (75-18-3)</td>
<td>LD50 oral rat</td>
<td>535 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD50 dermal rabbit</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LC50 inhalation rat (ppm)</td>
<td>40250 ppm/4h</td>
</tr>
<tr>
<td></td>
<td>ATE US (oral)</td>
<td>100.000 mg/kg body weight</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td></td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td></td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td></td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td></td>
<td>Not classified</td>
</tr>
</tbody>
</table>
**Dimethyl Sulfide (0.00001% - 4.20%) in Nitrogen**

**Safety Data Sheet**

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**Carcinogenicity**: Not classified

**Reproductive toxicity**: Not classified

**Specific target organ toxicity (single exposure)**: Not classified

**Specific target organ toxicity (repeated exposure)**: Not classified

**Aspiration hazard**: Not classified

**Symptoms/injuries after inhalation**: May displace oxygen and cause rapid suffocation.

**Symptoms/injuries after skin contact**: Adverse effects not expected from this product.

**Symptoms/injuries after eye contact**: Adverse effects not expected from this product.

**Symptoms/injuries after ingestion**: Ingestion is not considered a potential route of exposure.

**Chronic symptoms**: Adverse effects not expected from this product.

**SECTION 12: Ecological information**

**12.1. Toxicity**

**Dimethyl sulfide (75-18-3)**

| EC50 Daphnia 1 | 23 mg/l (Exposure time: 48 h - Species: Daphnia pulex) |

**12.2. Persistence and degradability**

**Nitrogen (7727-37-9)**

| Persistence and degradability | No ecological damage caused by this product. |

**12.3. Bioaccumulative potential**

**Nitrogen (7727-37-9)**

| Log Pow | Not applicable for inorganic gases. |
| Bioaccumulative potential | No ecological damage caused by this product. |

**12.4. Mobility in soil**

**Nitrogen (7727-37-9)**

| Ecology - soil | No ecological damage caused by this product. |

**12.5. Other adverse effects**

**Effect on ozone layer**: No known effects from this product.

**Effect on the global warming**: No known ecological damage caused by this product.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

| Waste treatment methods | Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded. |
| Waste disposal recommendations | Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods. |

**SECTION 14: Transport information**

**Department of Transportation (DOT)**

| In accordance with DOT | UN1956 Compressed gas, n.o.s. (Dimethyl Sulfide, Nitrogen) |
| UN-No.(DOT) | UN1956 |
| Proper Shipping Name (DOT) | Compressed gas, n.o.s. |
Hazard labels (DOT) : 2.2 - Non-flammable gas

DOT Packaging Non Bulk (49 CFR 173.xxx) : 302;305
DOT Packaging Bulk (49 CFR 173.xxx) : 314;315
DOT Symbols : G - Identifies PSN requiring a technical name
DOT Packaging Exceptions (49 CFR 173.xxx) : 306;307
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 75 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg
DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

Other information : No supplementary information available.

TDG
Transport document description : UN1956 COMPRESSED GAS, N.O.S., 2.2
UN-No. (TDG) : UN1956
TDG Proper Shipping Name : COMPRESSED GAS, N.O.S.
TDG Primary Hazard Classes : 2.2 - Class 2.2 - Non-Flammable, Non-Toxic Gas.

Transport by sea
UN-No. (IMDG) : 1956
Proper Shipping Name (IMDG) : COMPRESSED GAS, N.O.S.
Class (IMDG) : 2 - Gases

Air transport
UN-No. (IATA) : 1956
Proper Shipping Name (IATA) : COMPRESSED GAS, N.O.S.
Class (IATA) : 2

SECTION 15: Regulatory information

15.1. US Federal regulations
Nitrogen (7727-37-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Dimethyl sulfide (75-18-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
CANADA
Nitrogen (7727-37-9)
Listed on the Canadian DSL (Domestic Substances List)
WHMIS Classification : Class A - Compressed Gas

Dimethyl sulfide (75-18-3)
Listed on the Canadian DSL (Domestic Substances List)
WHMIS Classification : Class B Division 2 - Flammable Liquid
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations
No additional information available

National regulations
### Dimethyl Sulfide (0.00001% - 4.20%) in Nitrogen

**Safety Data Sheet**

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**SECTION 1: Identification**

**Chemical identity**

- **Common name**: Dimethyl sulfide
- **Chemical formula**: C6H12S
- **CAS number**: 75-18-3

**Physical properties**

- **Odor**: Characteristic of dimethyl sulfide
- **Appearance**: Colorless gas
- **Odor threshold**: Not specified
- **Flash point**: Not available
- **Melting point**: 0°C
- **Boiling point**: 10°C

**Ambient stability**

- Stable under normal storage conditions
- Do not store at temperatures above 40°C

**Dangerous properties**

- **Explosion hazard**: Not hazardous
- **Fire hazard**: Flammable gases
- **Toxicity**: Acute toxicity
- **Reactivity**: Reacts with strong oxidizing agents

**Technical information**

- **Material safety data sheet (MSDS)**: Provided
- **Emergency response guidebook (ERG)**: Not specified

**SECTION 2: Hazard potential**

**Hazard classification**

- **H225**: Highly flammable liquid and vapor
- **H280**: Contains gas under pressure; may explode if heated
- **H301**: Toxic if swallowed
- **H315**: Causes skin irritation
- **H319**: Causes serious eye irritation

**Health effects**

- **Acute toxicity**: Category 3
- **Eye irritation**: Category 2A
- **Skin irritation**: Category 2
- **Health effect Class**: Category 1

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**SECTION 4: First aid measures**

**Emergency measures**

- **Eye contact**: Rinse with water for 15 minutes
- **Skin contact**: Wash with soap and water
- **Inhalation**: Fresh air required
- **Ingestion**: Induce vomiting

**Transport data**

- **Sedimentation**: Not applicable
- **Polymerization**: Not applicable
- **Reactivity**: May react with strong oxidizing agents

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**SECTION 5: Fire and explosion hazard**

**Fire fighting**

- **Fire extinguishing media**: Water, dry chemical, foam
- **Special hazards**: Reacts with strong oxidizing agents

**Hazardous decomposition products**

- Sulfur dioxide, carbon monoxide

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**SECTION 6: Accidental release measures**

**Personal precautions and protective equipment**

- **Eye protection**: Face shield
- **Respiratory protection**: Yes, if atmospheres hazardous
- **Skin protection**: Yes, if atmospheres hazardous

**Environmental precautions**

- Do not discharge into sewers

**Handling and storage**

- **Ventilation**: Good ventilation required
- **Stability**: Stable under normal conditions
- **Precautionary measures**: Use explosion-proof equipment

**Disposal**

- **Waste disposal**: Collect and dispose appropriately

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**SECTION 7: Handling and storage**

**Precautions to be taken in handling and storing**

- **Incompatible materials**: Oxidizing agents
- **Safe handling practices**: Avoid breathing vapors

**Transport information**

- **UN number**: Not applicable

**SECTION 8: Exposures controls/Personal protection**

**Engineering controls**

- **Ventilation**: Local exhaust systems
- **Personal protective equipment**: Respirator if necessary

**Hygiene measures**

- Washing hands before eating or drinking

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**SECTION 9: Physical and chemical properties**

**Physical properties**

- **Odor**: Characteristic of dimethyl sulfide
- **Appearance**: Colorless gas
- **Odor threshold**: Not available
- **Flash point**: Not available
- **Melting point**: 0°C
- **Boiling point**: 10°C

**Chemical properties**

- **Stability**: Stable under normal conditions
- **Reactivity**: Reacts with strong oxidizing agents

**Health effects**

- **Acute toxicity**: Category 3
- **Eye irritation**: Category 2A
- **Skin irritation**: Category 2
- **Health effect Class**: Category 1

**Environmental effects**

- **Toxicological effects**: No available data

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**SECTION 10: Stability and reactivity**

**Stability**

- Stable under normal conditions
- Avoid strong oxidizing agents

**Reactivity**

- Reacts with strong oxidizing agents

**Hazardous decomposition products**

- Sulfur dioxide, carbon monoxide

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**SECTION 11: Toxicological information**

**Toxicological properties**

- **Acute toxicity**: Category 3
- **Eye irritation**: Category 2A
- **Skin irritation**: Category 2
- **Health effect Class**: Category 1

**Exposure controls**

- **Respiratory protection**: Yes, if atmospheres hazardous
- **Skin protection**: Yes, if atmospheres hazardous

**Human health effects**

- **Symptoms**: None reported

**Other information**

- **Exposure limits**: Not available

**First aid and emergency procedures**

- **Emergency procedures**: Induce vomiting

**Disposal and clean-up procedures**

- **Waste disposal**: Collect and dispose appropriately

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**SECTION 12: Ecological information**

**Ecotoxicological properties**

- **Toxicity**: Not available

**Biodegradability**

- **Biodegradable**: Not available

**Environmental fate**

- **Stability**: Stable under normal conditions
- **Disposal**: Collect and dispose appropriately

**Residual effects**

- **Ecological effects**: No available data

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**SECTION 13: Disposal considerations**

**Disposal methods**

- **Waste disposal**: Collect and dispose appropriately

**Transport information**

- **UN number**: Not applicable

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**SECTION 14: Transport information**

**UN number**: Not applicable

**Transport hazards**

- **Flash point**: Not available
- **Spontaneous combustion**: No
- **Explosion hazard**: Not hazardous
- **Fire hazard**: Flammable gases
- **Toxicity**: Acute toxicity
- **Reactivity**: Reacts with strong oxidizing agents

**Hazardous materials information**

- **Dangerous goods classification**: Not applicable

**Labels**

- **Hazard pictograms**: None

**Packaging**

- **Packaging materials**: Not available

**Transport documents**

- **Documentation**: Not available

**Travel restrictions**

- **Travel restrictions**: None

**Advisories**

- **Transport advisory**: Not applicable

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**SECTION 15: Regulatory information**

**Regulatory status**

- **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 Korean ECL (Existing Chemicals List)**
- **Listed on NZIoC (New Zealand Inventory of Chemicals)**
- **Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)**
- **Nitrogen (7727-37-9)**
  - 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
- **Dimethyl sulfide (75-18-3)**
  - 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
  - Environmental Hazard List

**Regulatory requirements**

- **US State regulations**: Review for applicability to this product.