

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

1.1. Product identifier

Product form : Mixture
 Product name : Methane (0.000001% - 2.5%) in Oxygen
 Product code : SG-2002-00027

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 America Specialty Gases
 6141 Easton Rd
 Plumsteadville, PA 18949 - USA
 T 1.800.217.2688
www.airliquide.com

1.4. Emergency telephone number

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

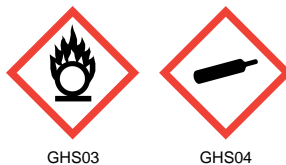
Classification (GHS-US)

Ox. Gas 1 H270
 Compressed gas H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H270 - May cause or intensify fire; oxidizer
 H280 - Contains gas under pressure; may explode if heated

Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood
 P220 - Keep/Store away from clothing, combustible materials
 P244 - Keep reduction valves/valves and fittings free from oil and grease
 P271 - Use only outdoors or in a well-ventilated area
 P370 + P376 - In case of fire, stop leak if safe to do so.
 P403 - Store in a well-ventilated place
 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-PG20 - Use only with equipment of compatible materials of construction and rated for cylinder pressure
 CGA-PG21 - Open valve slowly
 CGA-PG22 - Use only with equipment cleaned for oxygen service

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

Methane (0.000001% - 2.5%) in Oxygen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

| Name | Product identifier | % | Classification (GHS-US) |
|---------|--------------------|------------------|---|
| Oxygen | (CAS No)7782-44-7 | 97.5 - 99.999999 | Ox. Gas 1, H270 Compressed gas, H280 |
| Methane | (CAS No)74-82-8 | 0.000001 - 2.5 | Flam. Gas 1, H220 Compressed gas, H280 |

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Adverse effects not expected from this product.
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 : Adverse effects not expected from this product.
Symptoms/injuries after inhalation : Adverse effects not expected from this product.
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.
Symptoms/injuries upon intravenous administration : Not known.
Chronic symptoms : None known.

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 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 under recommended storage and handling conditions (see section 7).

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.
Emergency procedures : Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.

Methane (0.000001% - 2.5%) in Oxygen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

6.1.2. For emergency responders

- Protective equipment : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. 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

No additional information available

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.
- 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 : Reducing agents.
- Incompatible materials : Flammable materials.

7.3. Specific end use(s)

Test gas/Calibration gas.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Methane (74-82-8) | | |
|-------------------|-----------------|----------|
| USA ACGIH | ACGIH TWA (ppm) | 1000 ppm |

8.2. Exposure controls

- Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits. Consider work permit system e.g. for maintenance activities.
- Hand protection : Wear working gloves when handling gas containers. 29CFR 1910.138: Hand Protection.
- Eye protection : Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.
- 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.
- 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.
- Other information : Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.

Methane (0.000001% - 2.5%) in Oxygen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | : Gas |
| Appearance | : Colorless gas. |
| Color | : Colorless |
| Odor | : odorless |
| Odor threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapor pressure | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : No data available |
| Relative gas density | : Heavier than air. |
| Solubility | : Water: Solubility in water of component(s) of the mixture : • : 39 mg/l • : 26 mg/l |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : Not flammable. |
| Oxidizing properties | : May cause or intensify fire; oxidizer. |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None under recommended storage and handling conditions (see section 7).

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

May react violently with reducing agents.

10.4. Conditions to avoid

Refer to Section 10 on Incompatible Materials.

10.5. Incompatible materials

Flammable materials. Reducing agents.

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

Oxygen (7782-44-7)

Methane (0.000001% - 2.5%) in Oxygen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| | |
|---------------------------|---------------|
| LC50 inhalation rat (ppm) | 400000 ppm/4h |
|---------------------------|---------------|

Methane (74-82-8)

| | |
|---------------------------|-------------------------|
| LC50 inhalation rat (ppm) | 410000 ppm/4h |
| ATE US (gases) | 410000.00000000 ppmV/4h |

| | |
|--|------------------|
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Not classified |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| 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 | : Adverse effects not expected from this product. |
| 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. |
| Symptoms/injuries upon intravenous administration | : Not known. |
| Chronic symptoms | : None known. |

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Oxygen (7782-44-7)

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

Methane (74-82-8)

| | |
|-------------------------------|---|
| Persistence and degradability | The substance is biodegradable. Unlikely to persist. No data available. |
|-------------------------------|---|

12.3. Bioaccumulative potential

Oxygen (7782-44-7)

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

Methane (74-82-8)

| | |
|---------------------------|---|
| Log Pow | 1.09 |
| Log Kow | Not applicable for gas-mixtures. |
| Bioaccumulative potential | Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9. |

12.4. Mobility in soil

Oxygen (7782-44-7)

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

Methane (74-82-8)

| | |
|------------------|---|
| Mobility in soil | No data available. |
| Ecology - soil | Because of its high volatility, the product is unlikely to cause ground or water pollution. |

12.5. Other adverse effects

| | |
|------------------------------|---|
| Effect on ozone layer | : No additional information available |
| Effect on the global warming | : Contains greenhouse gas(es) not covered by 842/2006/EC. |

Methane (0.00001% - 2.5%) in Oxygen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

In accordance with DOT

- Transport document description : UN3156 Compressed gas, oxidizing, n.o.s.
- UN-No.(DOT) : 3156
- DOT NA no. : UN3156
- DOT Proper Shipping Name : Compressed gas, oxidizing, n.o.s.
- Hazard labels (DOT) : 2.2 - Non-flammable gas
5.1 - Oxidizer



- DOT Symbols : G - Identifies PSN requiring a technical name
- DOT Special Provisions (49 CFR 172.102) : A14 - This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with 173.306 of this subchapter when transported aboard an aircraft.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 306
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 302
- DOT Packaging Bulk (49 CFR 173.xxx) : 314;315
- 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 : 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.

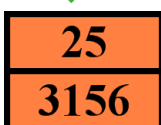
Additional information

- Other information : No supplementary information available.

ADR

- Transport document description : UN 3156, 2.2 (5.1), (E)
- Class (ADR) : 2 - Gases
- Hazard identification number (Kemler No.) : 25
- Classification code (ADR) : 10
- Danger labels (ADR) : 2.2 - Non-flammable compressed gas
5.1 - Oxidizer



- Orange plates : 

- Tunnel restriction code (ADR) : E
- LQ : 0

Methane (0.000001% - 2.5%) in Oxygen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Excepted quantities (ADR) : E0

Transport by sea

UN-No. (IMDG) : 3156
Proper Shipping Name (IMDG) : COMPRESSED GAS, OXIDIZING, N.O.S.
Class (IMDG) : 2.2 - Non-flammable, non-toxic gases

Air transport

UN-No.(IATA) : 3156
Proper Shipping Name (IATA) : COMPRESSED GAS, OXIDIZING, N.O.S.
Class (IATA) : 2

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

Oxygen (7782-44-7)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|--|
| WHMIS Classification | Class A - Compressed Gas Class C - Oxidizing Material |
|----------------------|--|

Methane (74-82-8)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|--|
| WHMIS Classification | Class A - Compressed Gas Class B Division 1 - Flammable Gas |
|----------------------|--|

EU-Regulations

No additional information available

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

Not classified

Classification according to Directive 67/548/EEC or 1999/45/EC

15.2.2. National regulations

No additional information available

15.3. US State regulations

Oxygen (7782-44-7)

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

Methane (74-82-8)

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

Indication of changes : Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.

Other information : This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

Full text of H-phrases: see section 16:

| | |
|----------------|-------------------------------------|
| Compressed gas | Gases under pressure Compressed gas |
| Flam. Gas 1 | Flammable gases Category 1 |

Methane (0.000001% - 2.5%) in Oxygen

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| | |
|-----------|--|
| Ox. Gas 1 | Oxidizing gases Category 1 |
| H220 | Extremely flammable gas |
| H270 | May cause or intensify fire; oxidizer |
| H280 | Contains gas under pressure; may explode if heated |

SDS US (GHS HazCom 2012)

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Air Liquide America Corporation's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.