Oxygen (0.001- 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

Safety Data Sheet 50264
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 04/11/2015 Version: 1.0

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

1.1. Product identifier
Product form : Mixture
Product name : Oxygen (0.001- 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

Replaces ISC MSDS No. : 1810-2186, 1810-7227, 1810-9083, 1810-9163, 1810-9180, 1810-9196

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
U.S. Supplier: Industrial Scientific Corporation
1 Life Way
Pittsburgh, PA 15205-7500
Phone (412) 788-4353
TOLL-FREE 800-DETECTS
Fax (412) 788-8353

MANUFACTURER: CALGAZ
821 Chesapeake Drive
Cambridge, MD 21613

1.4. Emergency telephone number
Emergency number : CHEMTREC: 1-800-424-9300
Internationally: 1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (GHS-US)
Compressed gas H280

Full text of H-phrases: see section 16

2.2. Label elements
GHS-US labeling
Hazard pictograms (GHS-US) :

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+P340 - 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
Oxygen (0.001- 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

Safety Data Sheet

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>75.725 - 80.399</td>
<td>Compressed gas, H280</td>
</tr>
<tr>
<td>Oxygen</td>
<td>(CAS No) 7782-44-7</td>
<td>0.001 - 19.49</td>
<td>Ox. Gas 1, H270</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>(CAS No) 109-66-0</td>
<td>0.1 - 0.75</td>
<td>Flam. Liq. 2, H225, STOT SE 3, H336, Asp. Tox. 1, H304, Aquatic Chronic 2, H411</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>(CAS No) 7783-08-4</td>
<td>0.001 - 0.025</td>
<td>Flam. Gas 1, H220, Liquefied gas, H280, Acute Tox. 2 (Inhalation:gas), H330, STOT SE 3, H335, Aquatic Acute 1, H400</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.
Symptoms/injuries upon intravenous administration : Not known.
Chronic symptoms : Adverse effects not expected from this product.

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.
Oxygen (0.001 - 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

Safety Data Sheet

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.

Specific methods: Exposure to fire may cause containers to rupture/explode. Continue water spray from protected position until container stays cool. Move containers away from the fire area if this can be done without risk.

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 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

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.

Safe handling of the gas receptacle: Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

Safe use of the product: 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 remove or deface labels provided by the supplier for the identification of the cylinder contents. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.

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.

Storage area: Store away from heat. Store in a well-ventilated place.

7.3. Specific end use(s)

See Section 1.2.
SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Compound</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen (0.001- 19.49%,)</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Pentane (0.1 - 0.75%,)</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hydrogen Sulfide (0.001-0.025%)</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**n-Pentane (109-66-0)**

<table>
<thead>
<tr>
<th>Compound</th>
<th>ACGIH TWA (ppm)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>OSHA PEL (TWA) (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td></td>
<td>600 ppm</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>2950 mg/m³</td>
<td>1000 ppm</td>
</tr>
</tbody>
</table>

**Hydrogen sulfide (7783-06-4)**

<table>
<thead>
<tr>
<th>Compound</th>
<th>ACGIH TWA (ppm)</th>
<th>ACGIH STEL (ppm)</th>
<th>OSHA PEL (Ceiling) (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td></td>
<td>1 ppm</td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>20 ppm</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Compound</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not applicable</td>
<td>Not applicable</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>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Gas</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear, colorless gas.</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>gasoline-like 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>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (ether=1)</td>
<td>Not applicable for gas-mixtures.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>See Section 2.1 and 2.2</td>
</tr>
</tbody>
</table>
Oxygen (0.001-19.49%), Pentane (0.1-0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

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### Explosion limits
- Not applicable - not flammable

### Explosive properties
- Not applicable - not flammable.

### Oxidizing properties
- None.

### Vapor pressure
- Not applicable.

### Relative density
- No data available

### Relative vapor density at 20 °C
- Not applicable for gas-mixtures.

### Molecular mass
- Not applicable for gas-mixtures.

### Relative gas density
- Similar to air

### Solubility
- No data available

### Log Pow
- Not applicable for gas-mixtures.

### Log Kow
- Not applicable for gas-mixtures.

### Auto-ignition temperature
- No data available

### Decomposition temperature
- No data available

### Viscosity
- No data available

### Viscosity, kinematic
- Not applicable.

### Viscosity, dynamic
- Not applicable.

### 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

**Oxygen (7782-44-7)**
- LC50 inhalation rat (ppm): 800000 ppm/4h

**n-Pentane (109-66-0)**
- LD50 dermal rabbit: 3000 mg/kg
- LC50 inhalation rat (mg/l): 364 g/m³ (Exposure time: 4 h)
- LC50 inhalation rat (ppm): 123317.17 ppm/4h
- ATE US (dermal): 3000.000 mg/kg body weight
- ATE US (gases): 123317.170 ppmV/4h
- ATE US (vapors): 364.000 mg/l/4h
- ATE US (dust, mist): 364.000 mg/l/4h

**Hydrogen sulfide (7783-06-4)**
- LC50 inhalation rat (mg/l): 0.99 mg/l (Exposure time: 1 h)
- LC50 inhalation rat (ppm): 356 ppm/4h
Oxygen (0.001- 19.49%) Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

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<table>
<thead>
<tr>
<th>Nitrogen (7727-37-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 inhalation rat (ppm)</td>
</tr>
</tbody>
</table>

- 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: 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.
Symptoms/injuries upon intravenous administration: Not known.
Chronic symptoms: Adverse effects not expected from this product.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: No ecological damage caused by this product.

- n-Pentane (109-66-0)
  - LC50 fish 1: 9.87 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
  - EC50 Daphnia 1: 9.74 mg/l (Exposure time: 48 h - Species: Daphnia magna)
  - LC50 fish 2: 11.59 mg/l (Exposure time: 96 h - Species: Pimephales promelas)

- Hydrogen sulfide (7783-06-4)
  - LC50 fish 1: 0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
  - EC50 Daphnia 1: 0.022 mg/l (Exposure time: 96 h - Species: Gammarus pseudolimnaeus)
  - LC50 fish 2: 0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

12.2. Persistence and degradability

- Oxygen (0.001- 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen
  - Persistence and degradability: No data available.

- Oxygen (7782-44-7)
  - Persistence and degradability: No ecological damage caused by this product.

- Hydrogen sulfide (7783-06-4)
  - Persistence and degradability: Not applicable for inorganic gases.

- Nitrogen (7727-37-9)
  - Persistence and degradability: No ecological damage caused by this product.

12.3. Bioaccumulative potential

- Oxygen (0.001- 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen
  - Log Pow: Not applicable for gas-mixtures.
  - Log Kow: Not applicable for gas-mixtures.
  - Bioaccumulative potential: No data available.

- Oxygen (7782-44-7)
  - Log Pow: Not applicable for inorganic gases.
Oxygen (0.001 - 19.49%,) Pentane (0.1 - 0.75%,) Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

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<table>
<thead>
<tr>
<th>Oxygen (7782-44-7)</th>
<th>Bioaccumulative potential</th>
<th>No ecological damage caused by this product.</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Pentane (109-66-0)</td>
<td>Log Pow</td>
<td>3.39</td>
</tr>
</tbody>
</table>

**Hydrogen sulfide (7783-06-4)**

<table>
<thead>
<tr>
<th>BCF fish 1</th>
<th>(no bioaccumulation expected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>Not applicable for inorganic gases.</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Log Pow</th>
<th>Not applicable for inorganic gases.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>No ecological damage caused by this product.</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

**Oxygen (0.001 - 19.49%,) Pentane (0.1 - 0.75%,) Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen**

<table>
<thead>
<tr>
<th>Mobility in soil</th>
<th>No data available.</th>
</tr>
</thead>
</table>

**Ecology - soil**

**Oxygen (7782-44-7)**

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

**Hydrogen sulfide (7783-06-4)**

| Ecology - soil | Because of its high volatility, the product is unlikely to cause ground or water pollution. |

**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

| Transport document description | UN1956 Compressed gas, n.o.s. Oxygen, Nitrogen, 2.2 |

<table>
<thead>
<tr>
<th>UN-No.(DOT)</th>
<th>UN1956</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name (DOT)</td>
<td>Compressed gas, n.o.s. Oxygen, Nitrogen</td>
</tr>
<tr>
<td>Department of Transportation (DOT) Hazard Classes</td>
<td>2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115</td>
</tr>
<tr>
<td>Hazard labels (DOT)</td>
<td>2.2 - Non-flammable gas</td>
</tr>
</tbody>
</table>

| 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 |
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**DOT Quantity Limitations**
- Passenger aircraft/rail: 75 kg
- Cargo aircraft only: 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.

**Additional information**
- No supplementary information available.

**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:
  - 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.

**ADR**
- Transport document description: UN 1956 COMPRESSED GAS, N.O.S., 2.2, (E)
- Class (ADR): 2 - Gases
- Hazard identification number (Kemler No.): 20
- Classification code (ADR): 1A
- Hazard labels (ADR): 2.2 - Non-flammable compressed gas

**Orange plates**

**Tunnel restriction code (ADR): E**

- Limited quantities (ADR): 120ml
- Excepted quantities (ADR): E1

**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**

**Oxygen (7782-44-7)**
- Listed on the United States TSCA (Toxic Substances Control Act) inventory

**n-Pentane (109-66-0)**
- Listed on the United States TSCA (Toxic Substances Control Act) inventory

**EPA TSCA Regulatory Flag**
- T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
**Oxygen (0.001- 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen**

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<table>
<thead>
<tr>
<th><strong>Hydrogen sulfide (7783-06-4)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
</tr>
<tr>
<td>Listed on the United States SARA Section 302</td>
<td></td>
</tr>
<tr>
<td>Listed on United States SARA Section 313</td>
<td></td>
</tr>
<tr>
<td>SARA Section 302 Threshold Planning Quantity (TPQ)</td>
<td>500</td>
</tr>
<tr>
<td>SARA Section 313 - Emission Reporting</td>
<td>1.0 %</td>
</tr>
</tbody>
</table>

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

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

**Oxygen (7782-44-7)**

Listed on the Canadian DSL (Domestic Sustances List)

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Class A - Compressed Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class C - Oxidizing Material</td>
</tr>
</tbody>
</table>

**n-Pentane (109-66-0)**

Listed on the Canadian DSL (Domestic Sustances List)

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Class B Division 2 - Flammable Liquid</th>
</tr>
</thead>
</table>

**Hydrogen sulfide (7783-06-4)**

Listed on the Canadian DSL (Domestic Sustances List)

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Class A - Compressed Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class B Division 1 - Flammable Gas</td>
</tr>
<tr>
<td></td>
<td>Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects</td>
</tr>
<tr>
<td></td>
<td>Class D Division 2 Subdivision B - Toxic material causing other toxic effects</td>
</tr>
</tbody>
</table>

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

Listed on the Canadian DSL (Domestic Sustances List)

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Class A - Compressed Gas</th>
</tr>
</thead>
</table>

#### EU-Regulations

**Oxygen (7782-44-7)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**n-Pentane (109-66-0)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Hydrogen sulfide (7783-06-4)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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

Not classified

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

No additional information available

#### National regulations

**Oxygen (7782-44-7)**

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on IECS (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)
Oxygen (0.001- 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

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### n-Pentane (109-66-0)
- 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 Japanese ENCS (Existing & New Chemical Substances) inventory
- 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)
- Listed on the Canadian IDL (Ingredient Disclosure List)

### Hydrogen sulfide (7783-06-4)
- 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 Japanese ENCS (Existing & New Chemical Substances) inventory
- 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)
- Listed on the Canadian IDL (Ingredient Disclosure List)

### Nitrogen (7727-37-9)
- 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)

### 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

#### n-Pentane (109-66-0)
- 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

#### Hydrogen sulfide (7783-06-4)
- U.S. - Massachusetts - Right To Know List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
- U.S. - Pennsylvania - RTK (Right to Know) List

#### 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

### 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.
Oxygen (0.001- 19.49%), Pentane (0.1 - 0.75%), Hydrogen Sulfide (0.001-0.025%) in balance Nitrogen

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

<table>
<thead>
<tr>
<th>H-phrases</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 2 (Inhalation:gas)</td>
<td>Acute toxicity (inhalation:gas) Category 2</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment - Acute Hazard Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment - Chronic Hazard Category 2</td>
</tr>
<tr>
<td>Asp. Tox. 1</td>
<td>Aspiration hazard Category 1</td>
</tr>
<tr>
<td>Compressed gas</td>
<td>Gases under pressure Compressed gas</td>
</tr>
<tr>
<td>Flam. Gas 1</td>
<td>Flammable gases Category 1</td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
<td>Flammable liquids Category 2</td>
</tr>
<tr>
<td>Liquefied gas</td>
<td>Gases under pressure Liquefied gas</td>
</tr>
<tr>
<td>Ox. Gas 1</td>
<td>Oxidizing gases Category 1</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>H220</td>
<td>Extremely flammable gas</td>
</tr>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>H270</td>
<td>May cause or intensify fire; oxidizer</td>
</tr>
<tr>
<td>H280</td>
<td>Contains gas under pressure; may explode if heated</td>
</tr>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters airways</td>
</tr>
<tr>
<td>H330</td>
<td>Fatal if inhaled</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

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 gas mixture. To the best of Calgaz’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 gas mixture 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.