



Safety Data Sheet

Oxygen, Liquid

Section 1: Product and Company Identification

Purity Cylinder Gases, Inc.

2580 28th St SW
Wyoming, MI 49519
P: (616)532-2375
www.puritygas.com

Product Code: Oxygen, Liquid

Section 2: Hazards Identification



Danger

Hazard Classification:

Gases Under Pressure
Oxidizing Gas (Category 1)

Hazard Statements:

Contains gas under pressure; may explode if heated
May cause or intensify fire; oxidizer

Precautionary Statements

Prevention:

Keep reduction valves/valves and fittings free from oil and grease.
Keep and store away from clothing and combustible materials.

Response:

In case of fire: Stop leak if safe to do so.

Storage:

Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

| |
|--------------|
| CAS # |
| 7782-44-7 |

| Chemical Substance | Chemical Family | Trade Names |
|--------------------|-----------------|--|
| OXYGEN, LIQUID | Inorganic gases | LIQUID OXYGEN; LOX; OXYGEN; OXYGEN, PRESSURIZED LIQUID; UN 1073; O2; OXYGEN (CRYOGENIC LIQUID) |

Section 4: First Aid Measures

| Skin Contact | Eye Contact | Ingestion | Inhalation | Note to Physicians |
|--|---|------------------------|---|--------------------|
| Immediately flush with plenty of lukewarm water, or wrap affected area in blankets. Get immediate medical attention. | Flush eyes with plenty of water for at least 15 minutes. Get medical attention. | Get medical attention. | Remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention. | None |

Section 5: Fire Fighting Measures

| Suitable Extinguishing Media | Products of Combustion | Protection of Firefighters |
|---|----------------------------|--|
| Non-flammable. Use extinguishing agent appropriate for the material which is burning. Use water in large quantities for fires involving oxygen. | Oxides of burning material | <ul style="list-style-type: none"> ▪ Respiratory protection may be needed for frequent or heavy exposure. ▪ None |

Section 6: Accidental Release Measures

| Personal Precautions | Environmental Precautions | Methods for Containment |
|--|---|--|
| Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. | Avoid contact with combustible materials. | Stop leak if possible without personal risk. |

| Methods for Cleanup | Other Information |
|-------------------------|-------------------|
| Stop leak and ventilate | None |

Section 7: Handling and Storage

| Handling | Storage |
|--|---|
| Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 125 F (52 C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods. | Do not get liquid in eyes, on skin, or clothing. Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Open valve slowly. Close cylinder valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier. |

Section 8: Exposure Controls/Personal Protection

| Exposure Guidelines |
|--|
| OXYGEN, LIQUID: No occupational exposure limits established. |

Engineering Controls

Handle only in fully enclosed systems.

| Eye Protection | Skin Protection | Respiratory Protection |
|----------------|-----------------|------------------------|
| | | |

| Eye Protection | Skin Protection | Respiratory Protection |
|---------------------------------------|--|--|
| Wear splash resistant safety goggles. | Wear appropriate protective, cold insulating clothing. | Respiratory protection may be needed for frequent or heavy exposure. |

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

| Physical State | Appearance | Color | Change in Appearance | Physical Form | Odor | Taste |
|----------------|------------|-------|----------------------|---------------|----------|-----------|
| Gas | Clear | Blue | N/A | Gas | Odorless | Tasteless |

| Flash Point | Flammability | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|---------------|---------------|-----------------------|--------------------------|------------------------|------------------------|
| Not flammable | Not available | Not available | Nonflammable | Nonflammable | Nonflammable |

| Boiling Point | Freezing Point | Vapor Pressure | Vapor Density | Specific Gravity | Water Solubility | pH | Odor Threshold | Evaporation Rate | Viscosity |
|-----------------|-----------------|-------------------|---------------|------------------|------------------|----------------|----------------|------------------|-------------------|
| -297 F (-183 C) | -360 F (-218 C) | 760 mmHg @ -183 C | 1.1 (Air=1) | 1.1407 @ -183 C | 3.2% @ 25 C | Not applicable | Not available | Not applicable | 0.156 cP @ -173 C |

| Molecular Weight | Molecular Formula | Density | Weight per Gallon | Volatility by Volume | Volatility | Solvent Solubility |
|------------------|-------------------|------------------|-------------------|----------------------|----------------|--------------------|
| 31.9988 | O2 | 1.309 g/L @ 25 C | Not available | Not applicable | Not applicable | Soluble: Alcohol |

Section 10: Stability and Reactivity

| Stability | Conditions to Avoid | Incompatible Materials |
|---|---|---|
| Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials, alkaline earth and alkali metals |

| Hazardous Decomposition Products | Possibility of Hazardous Reactions |
|--------------------------------------|------------------------------------|
| Miscellaneous decomposition products | Will not polymerize. |

Section 11: Toxicology Information

Acute Effects

| Oral LD50 | Dermal LD50 | Inhalation |
|-----------------|-----------------|--|
| Not established | Not established | Irritation, changes in body temperature, nausea, difficulty breathing, irregular heartbeat, dizziness, disorientation, hallucinations, mood swings, pain in extremities, tremors, lung congestion, convulsions |

| Eye Irritation | Skin Irritation | Sensitization |
|---------------------------|---------------------|---|
| Frostbite, blurred vision | Blisters, frostbite | No significant target effects reported. |

Chronic Effects

| Carcinogenicity | Mutagenicity | Reproductive Effects | Developmental Effects |
|-----------------|--------------|----------------------|-----------------------|
| Not known. | Available. | Available. | No data |

Section 12: Ecological Information

Fate and Transport

| Eco toxicity | Persistence / Degradability | Bioaccumulation / Accumulation | Mobility in Environment |
|--------------|-----------------------------|--------------------------------|-------------------------|
|--------------|-----------------------------|--------------------------------|-------------------------|

| | | | |
|---|---------------|---------------------|---------------|
| Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available | Not available | Low bioaccumulation | Not available |
|---|---------------|---------------------|---------------|

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

| Proper Shipping Name | ID Number | Hazard Class or Division | Packing Group | Labeling Requirements | Passenger Aircraft or Railcar Quantity Limitations | Cargo Aircraft Only Quantity Limitations | Additional Shipping Description |
|-----------------------------|-----------|--------------------------|---------------|-----------------------|--|--|---------------------------------|
| Oxygen, refrigerated liquid | UN1073 | 2.2 | Not available | 2.2; 5.1 | Forbidden | Forbidden | N/A |

Canadian Transportation of Dangerous Goods

| Shipping Name | UN Number | Class | Packing Group / Risk Group |
|-----------------------------|-----------|----------|----------------------------|
| Oxygen, refrigerated liquid | UN1073 | 2.2; 5.1 | Not applicable |

Section 15: Regulatory Information

U.S. Regulations

| CERCLA Sections | SARA 355.30 | SARA 355.40 |
|-----------------|----------------|----------------|
| Not regulated. | Not regulated. | Not regulated. |

SARA 370.21

| Acute | Chronic | Fire | Reactive | Sudden Release |
|-------|---------|------|----------|----------------|
| No | No | Yes | No | Yes |

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65

Not regulated.

Canadian Regulations

WHMIS Classification

Not determined.

National Inventory Status

| US Inventory (TSCA) | TSCA 12b Export Notification | Canada Inventory (DSL/NDL) |
|----------------------|------------------------------|----------------------------|
| Listed on inventory. | Not listed. | Not determined. |

Section 16: Other Information

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|---|
| NFPA Rating |
| HEALTH=3 FIRE=0 REACTIVITY=0 SPECIAL=OX |

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard