

## Oxygen Compressed

**1** PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier:** Oxygen Compressed  
**SDS Number:** 20  
**Revision Date:** 06/01/2015  
**Version:** 1.0  
**CAS Number:** 7782-44-7  
**Chemical Formula:** O<sub>2</sub>  
**Product Use:** Industrial, Medical, Food Applications  
**Supplier Details:** Roberts Oxygen Company, Inc.  
P.O. Box 5507  
Rockville, MD 20855

**Emergency:** Chemtrec: 24 hr/day 7 days/wk (800) 424-9300; for spills, leaks, fire, exposure or accidents involving this product  
**Phone:** Customer Service: (301) 948-8100, Mon through Fri from 7:30 am to 5:00 pm ET  
**Web:** www.robertsoxygen.com

**2** HAZARDS IDENTIFICATION**Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**

Physical, Oxidizing Gases, 1  
Physical, Gases Under Pressure, Compressed Gas

**GHS Label elements, including precautionary statements**

**GHS Signal Word:** DANGER

**GHS Hazard Pictograms:**

**GHS Hazard Statements:**

H270 - May cause or intensify fire; oxidizer  
H280 - Contains gas under pressure; may explode if heated

**GHS Precautionary Statements:**

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 free from grease and oil.  
P271+P403 - Use only outdoors or in a well-ventilated area.  
P370+P376 - In case of fire: Stop leak if safe to do so.  
CGA-PG05 - Use a back flow preventive device in the piping.  
CGA-PG20 - Use only equipment of compatible materials of construction.  
CGA-PG10 - Use only with equipment rated for cylinder pressure.  
CGA-PG22 - Use only with equipment cleaned for oxygen service.  
CGA-PG21 - Open valve slowly.  
CGA-PG06 - Close valve after each use and when empty.  
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52 °C (125 °F).  
OSHA-PG01 - DO NOT REMOVE THIS PRODUCT LABEL (or equivalent wording).  
CGA-PG27 - Read and follow the Safety Data Sheet (SDS) before use.

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**3 COMPOSITION/INFORMATION ON INGREDIENTS**

**Ingredients:**

Cas#	%	Chemical Name
7782-44-7		Oxygen, compressed

**4 FIRST AID MEASURES**

- Inhalation:** Remove victim to uncontaminated area wearing self-contained breathing apparatus (SCBA). Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing has stopped.
- Skin Contact:** Adverse effects not expected from this product
- Eye Contact:** Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately. Get immediate medical attention.
- Ingestion:** Ingestion is not considered a potential route of exposure.

**5 FIRE FIGHTING MEASURES**

- Flammability:** Non-Flammable
- Flash Point:** N/a
- Flash Point Method:** N/a
- Burning Rate:** N/a
- Autoignition Temp:** N/a
- LEL:** N/a

**Fire Fighting Instructions:**

Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire

Standard protective clothing and equipment: SCBA for fire fighters

Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. Stop flow of product if safe to do so. Use water spray or fog to knock down fire fumes if possible.

Oxidizing agent; vigorously accelerates combustion.

Contact with flammable materials may cause fire or explosion.

Smoking, flames and electric sparks are potential explosion hazards.

**6 ACCIDENTAL RELEASE MEASURES**

- Evacuate area.
- Remove all sources of ignition. Contact with flammable materials may cause fire or explosion.
- Ventilate area or move container to a well-ventilated area. Wear self-contained breathing apparatus (SCBA) when entering area, unless atmosphere is proven to be safe.
- Stop leak if safe to do so.

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## HANDLING AND STORAGE

**Handling Precautions:**

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents.

For additional handling recommendations, consult Compressed Gas Association's Pamphlet P-1.

**Storage Requirements:**

Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Post No Smoking or Open Flame signs in storage and use areas. There must be no source of ignition. Separate packages to protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70 and/or NFPA 221) or according to requirements determined by the Authority Having Jurisdiction.

Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. **OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a backflow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

For additional storage recommendations, consult Compressed Gas Association's Pamphlet P-1.

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**8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls:** Avoid oxygen rich (>23.5%) atmospheres. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available). Gas detectors should be used when oxidizing gases may be released. Oxygen detectors should be used when asphyxiating gases may be released. Provide adequate general and local exhaust ventilation. Consider work permit system, e.g., for maintenance activities.

**Personal Protective Equipment:**

Respiratory protection: None necessary

Hand protection: Handle gas containers with working gloves. Gloves must be inspected prior to use.

Eye protection: Wear safety glasses with side shields. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and body protection: Wear hand, head, and body protection to help prevent injury from process associated hazards, e.g., for welding exposure to radiation and sparks wear welder's gloves and protective goggles. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace and the user process and may include arm protectors, hats, and shoulder protection worn over substantial clothing. Consider wearing flame-resistant safety clothing and appropriate safety shoes while handling.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**9 PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Colorless gas	<b>Odor:</b>	Not applicable
<b>Physical State:</b>	Gas	<b>Molecular Formula:</b>	O <sub>2</sub>
<b>Odor Threshold:</b>	Not applicable	<b>Solubility:</b>	Water: 0.0491 mg/l
<b>Particle Size:</b>	Not applicable	<b>Softening Point:</b>	Not applicable
<b>Spec Grav./Density:</b>	.08279 lb/ft <sup>3</sup>	<b>Percent Volatile:</b>	Not applicable
<b>Viscosity:</b>	Not applicable	<b>Heat Value:</b>	Not applicable
<b>Sat. Vap. Conc.:</b>	Not applicable	<b>Freezing/Melting Pt.:</b>	No data available
<b>Boiling Point:</b>	-118.6°C	<b>Flash Point:</b>	No data available
<b>Flammability:</b>	Non-Flammable	<b>Octanol:</b>	Not applicable
<b>Partition Coefficient:</b>	Not applicable	<b>Vapor Density:</b>	No data available
<b>Vapor Pressure:</b>	Not applicable	<b>VOC:</b>	Not applicable
<b>pH:</b>	Not applicable	<b>Bulk Density:</b>	Not applicable
<b>Evap. Rate:</b>	Not applicable	<b>Auto-Ignition Temp:</b>	Not applicable
<b>Molecular weight:</b>	32 g/mol	<b>UFL/LFL:</b>	Not applicable
<b>Decomp Temp:</b>	650°C		

Gas/vapor is heavier than air. May accumulate in confined spaces, particularly at or below ground level.

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**10 STABILITY AND REACTIVITY**

<b>Stability:</b>	No reactivity
<b>Conditions to Avoid:</b>	None
<b>Materials to Avoid:</b>	Keep equipment free from oil and grease. Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (.30 bar) oxygen lines in case of combustion. May react violently with combustible materials. May react violently with reducing agents.
<b>Hazardous Decomposition:</b>	None
<b>Hazardous Polymerization:</b>	None

**11 TOXICOLOGICAL INFORMATION**

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Information on toxicological effects

Acute toxicity:

Oral LD50: No data available

Inhalation LC50

Dermal LD50

Other information on acute toxicity

Skin corrosion/irritation: No data available

Serious eye damage/eye irritation: No data available

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System): No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System): No data available

Aspiration hazard: no data available

Potential health effects: Inhalation: May be harmful if inhaled. May cause respiratory tract irritation. Ingestion: May be harmful if swallowed.

Skin: May be harmful if absorbed through skin. May cause skin irritation. Eyes: May cause eye irritation.

Signs and Symptoms of Exposure: Nausea, Dizziness, Unconsciousness. May be harmful.

Synergistic effects: No data available

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**12 ECOLOGICAL INFORMATION**

**Oxygen, compressed (7782-44-7)**  
 Information on ecological effects  
 Toxicity: No data available  
 Persistence and degradability: No data available  
 Bioaccumulative potential: No data available  
 Mobility in soil: No data available  
 PBT and vPvB assessment: No data available  
 Other adverse effects: No data available

**13 DISPOSAL CONSIDERATIONS**

Oxygen, compressed (7782-44-7)  
 Waste treatment methods:  
 May be vented to atmosphere in a well-ventilated place. Do not discharge into any place where its accumulation could be dangerous.  
 Waste disposal recommendations:  
 Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

**14 TRANSPORT INFORMATION**

UN1072, Oxygen, compressed, 2.2.(5.1)  
 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 cylinders, ensure there is adequate ventilation. Ensure that cylinders are firmly secured. Ensure cylinder valve is closed and not leaking. Ensure valve outlet cap (where provided) is correctly fitted. Ensure valve protection device (where provided) is correctly fitted.

**15 REGULATORY INFORMATION**

Component (CAS#) [%] - CODES  
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 Oxygen, compressed (7782-44-7) [n/a%] MASS, PA, NJ, TSCA  
  
 Listed on the United States TSCA (Toxic Substances Control Act) inventory  
 SARA Section 311/312 Hazard Classes: Sudden release of pressure hazard, Fire hazard  
  
 Regulatory CODE Descriptions  
 -----  
 MASS = MA Massachusetts Hazardous Substances List  
 PA = PA Right-To-Know List of Hazardous Substances  
 NJ = NJ Right-To-Know List of Hazardous Substances  
 TSCA = Toxic Substances Control Act

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**OTHER INFORMATION**

When two or more chemicals are mixed, additional, unexpected hazards can be created. It is the User's responsibility to obtain and understand the safety information for all mixture components prior to mixing. It may be necessary for the User to consult a trained professional to determine the hazards from mixing chemicals.

The information contained in this Safety Data Sheet is believed reliable, based on technical information and industry experience. Roberts Oxygen Company, Inc. provides no warranties or guarantees pertaining to the information provided in connection with the safety suggestions made. Moreover, it should not be assumed that every acceptable safety procedure, precaution, or device is listed. Abnormal or unusual circumstances may warrant or suggest further requirements or additional precautions. Roberts Oxygen Company, Inc. requests Users to thoroughly review this SDS and become aware of the product hazards and safety information. It is the User's responsibility to determine the conditions for safe use of the product and to confirm the compatibility of any other materials in their use or processes that come in contact with this product.

User acknowledges that the chemicals listed may be hazardous and must be handled accordingly. User further acknowledges its understanding that the chemicals listed may be classified by OSHA as hazardous chemicals, and that there are hazards associated with the possession, transportation and use of the chemical(s), containers, and related equipment and that the User must take proper account of those hazards and deal with them appropriately.

User shall warn all persons who may be exposed to any hazards relating to the chemical(s), containers, and related equipment. User acknowledges that the Seller has supplied the User with all relevant (Material) Safety Data Sheets (SDS) relating to the Products, and that additional copies of the SDS are available on request. OSHA regulations require User to develop and implement a written chemical hazard communications program for its employees regarding all hazardous chemicals.

Further, federal, state and local regulations may exist that are not addressed.

