Oxygen

Section 1: MANUFACTURER/PREPARER INFORMATION & HAZARD WARNINGS

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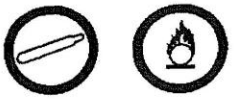
WHMIS HAZARD SYMBOLS & DEFINITIONS



Class A: Compressed gas
Class C: Oxidising material

Section 2: HEALTH HAZARD DATA

ROUTES OF ENTRY/SIGNS & SYMPTOMS OF ACUTE EXPOSURE:

INHALATION: Breathing high concentrations greater than 75 molar % by volume at atmospheric pressure for more than a few hours causes symptoms of hyperoxia (high oxygen exposure) with a variety of central nervous system effects. These symptoms include cramps, nausea, dizziness, hypothermia, diminished vision, nasal stuffiness, cough, sore throat, chest pain, respiratory difficulties, slow heart rate, fainting spells, and convulsions capable of leading to death. Breathing oxygen at higher pressures increases the likelihood of adverse effects within a shorter time period.

Chronic Effects: None established. **Carcinogenicity:** None. **Medical Conditions Aggravated by Exposure:** None reported.

EMERGENCY & FIRST AID PROCEDURES:

INHALATION: Remove victim to fresh air immediately. Keep victim warm and quiet. The physician should be informed that the victim is experiencing (has experienced) hyperoxia. Unconscious persons should be removed to fresh air and given assisted respiration. When breathing has been restored, treatment should be as above. Continued treatment should be symptomatic and supportive. PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO OXYGEN.

Section 3: PREVENTATIVE MEASURES

Respiratory Protection: Not normally needed.

Ventilation: Provide adequate ventilation to prevent excessive oxygen enrichment of the workplace atmosphere (above 25 molar %).

Gloves: User discretion. **Eye Protection:** Safety glasses are recommended when handling cylinders of compressed gas. **Other Protective Equipment:** Safety shoes. Contact lenses pose a special hazard; soft lenses may absorb irritants, and all lenses concentrate them.

Work/Hygienic Practices: Clothing that has been overexposed or contaminated with oxygen should be removed and considered unsafe (highly flammable) to wear for at least 30 minutes. Personnel who have been overexposed should stay in a well-ventilated or open area for 30 minutes before going into a confined space or near an ignition source.

Handling and Storing: Protect cylinders from physical damage. Store in clean, cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits, away from combustibles and away from full or empty stored cylinders which contain flammable products. Do not allow the temperature where cylinders are stored to exceed 52°C. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

KEEP OUT OF THE REACH OF CHILDREN AND ANIMALS.
N/A=Not Applicable. N/E=Not Evaluated/Established. N/R=Not Reported by Manufacturer.

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Section 4: HAZARDOUS COMPONENTS & EXPOSURE LIMITS

Hazardous Component Name	CAS #	OSHA PEL	ACGIH-TLV	Other Limit	% Wt
Oxygen	7782-44-7	N/A	N/A	25 molar % in atmosphere.	N/A

§ indicates a toxic chemical subject to the reporting requirements of SARA Title III, Section 313.
† indicates a chemical known to the State of California to cause cancer, birth defects or other reproductive harm per Proposition 65.

Section 5: PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: -182.97°C
Vapor Pressure: 21.1°C=Above critical temp.
Vapor Density (Air=1): 1.11
Solubility in Water: Slightly soluble.
Appearance/Odor: Colourless, odourless gas.
Specific Gravity: N/A
Percent Volatile: 100
Evaporation Rate: N/A
pH: N/A

Section 6: FIRE & EXPLOSION HAZARD DATA

Flash Point (Method): N/A—Non-flammable gas. **Flammable Limits. LEL**N/A **UEL:** N/A

Extinguishing Media: Copious quantities of water. If oxygen-enriched clothing catches fire, extinguish the flame under a safety shower; a fire blanket may not be effective.

Special Firefighting Procedures: If possible, stop the flow of oxygen which is supporting the fire if you can do so without risk. Use media that are appropriate to the surrounding fire. Immediately cool fire-exposed containers, standing at a safe distance as far away as possible and using a water spray.

Unusual Fire and Explosion Hazards: High pressure oxidising gas. Vigorously accelerates combustion Keep oil and grease away. Keep oxygen cylinders away from flammables and combustibles.

Section 7: REACTIVITY DATA

Stability: Stable. **Hazardous Polymerisation**: Will not occur. **Conditions to Avoid**: Oxygen vigorously accelerates combustion . Oxygen will undergo highly exothermic reactions or explosions with many materials. The greater the concentration of O2 in contact with a fuel or reducing agent, the greater the violence of the reaction. **Incompatibility**: Reacts explosively with phosphine, hydrazine, hydrogen sulfide, ethers, alcohols, hydrocarbons, etc. Incompatible with oils, grease, lubricants, asphalt and flammable materials. **Hazardous Decomposition Products**: N/A

Section 8: SPILLS, DISPOSAL & ADDITIONAL INFORMATION

Spill/Leak Procedures: Evacuate area. Use appropriate protective equipment. Provide optimum exhaust ventilation. If at all possible, shut off the source of the oxygen leak. Eliminate all ignition sources. If leak is in container or container valve, contact the supplier's closest location.

Waste Disposal: Do not attempt to dispose of residual or unused quantities. Return in the original container to the supplier for proper disposal. For emergency disposal, contact supplier's closest location.

Additional Information: Oxygen must not be used as a substitute for compressed air in pneumatic equipment. Do not use oil or grease to lubricate the valve on an oxygen cylinder or regulator. Oxygen containing equipment must be "cleaned for oxygen service" and rated for cylinder or regulator. Open/close cylinder valve slowly. Equipment must be grounded. Keep sparks, flame and lighted cigarettes away from cylinders. Valve outlets clogged with ice should be thawed with warm, NOT HOT water. Compressed gas cylinders to be refilled by qualified suppliers only.