

MATERIAL SAFETY DATA SHEET



LIQUID CARBONIC INDUSTRIES

810 JORIE BLVD. • OAK BROOK, IL 60521-2216 • 708 572-7500

OXYGEN, COMPRESSED

DOT: UN 1072
HAZ. CL.: Division 2.2
LABELS: Nonflammable Gas,
Oxidizer

October 1991

24 Hour Emergency Phone Numbers: (504) 673-8831; CHEMTREC (800) 424-9300

SECTION I--PRODUCT IDENTIFICATION

CHEMICAL NAME: Oxygen
COMMON NAME AND SYNONYMS: Oxygen, Compressed (D.O.T.); Gaseous Oxygen, GOX;
Oxygen Gas
CHEMICAL FAMILY: Oxidizer FORMULA: O₂

SECTION II--HAZARDOUS INGREDIENTS

MATERIAL	VOLUME %	CAS NO.	1991-1992 ACGIH TLV UNITS
Oxygen	99.5+	7782-44-7	None OSHA 1989 TWA - None Listed

SECTION III--PHYSICAL DATA

BOILING POINT (°F.): -297 SPECIFIC GRAVITY (H₂O=1): N/A (Gas)
VAPOR PRESSURE: @ 70°F * % VOLATILE BY VOLUME: N/A (Gas)
VAPOR DENSITY (AIR=1): @ 70°F = 1.11 EVAPORATION RATE (BUTYL ACETATE=1): N/A
SOLUBILITY IN WATER: Slightly (Gas)
APPEARANCE AND ODOR: Colorless, odorless gas
* Above critical temperature

SECTION IV--FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): N/A FLAMMABLE LIMITS: LEL N/A UEL N/A
EXTINGUISHING MEDIA:

Fires with oxygen as the oxidizer should be fought with copious quantities of water.

SPECIAL FIRE FIGHTING PROCEDURES: If possible, stop the source of oxygen which is supporting the fire. Use water spray to cool surrounding containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vigorously accelerates combustion. Many compounds which are not flammable in air may burn in pure oxygen. If cylinders are involved in a fire, safely relocate or keep cool with water spray.

SECTION V--HEALTH HAZARD DATA

Route(s) of Entry: Inhalation? Yes Skin? No Ingestion? No
Carcinogenicity: NTP? No IARC Monographs? No OSHA? No

EFFECTS OF OVEREXPOSURE:

Inhalation: Oxygen is the vital element in the atmosphere in which we live and breathe. The atmosphere contains approximately 21 molar % oxygen. Breathing higher concentrations could lead to hyperoxia and pneumonia or could present a risk of inflammation of organic matter in the body.

Persons in ill health where such illness would be aggravated by exposure to higher than normal levels of oxygen should not be allowed to work with or handle this product.

(Continued on Supplemental Sheet)

SECTION VI--REACTIVITY DATA

STABILITY: UNSTABLE () STABLE (x)

CONDITIONS TO AVOID: N/A

INCOMPATIBILITY (MATERIALS TO AVOID): All flammable materials

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: MAY OCCUR () WON'T OCCUR (x)

CONDITIONS TO AVOID: N/A

SECTION VII--SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Stop leak if possible. Be cognizant of increased flammability possibility in high oxygen content environments. Evacuate personnel from affected area. Remove sources of heat and ignition.

WASTE DISPOSAL METHOD:

Locate leaking containers in a downwind location and allow to vent to atmosphere.

SECTION VIII--SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: N/A

VENTILATION: LOCAL EXHAUST (x) To prevent accumulation above
MECHANICAL (GENERAL) (x) 25 molar %

PROTECTIVE GLOVES: Any material EYE PROTECTION: Safety goggles or glasses

OTHER PROTECTIVE EQUIPMENT:
Safety shoes, safety shower. Use appropriate protective equipment when welding or cutting.

SECTION IX--SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
Protect cylinders against physical damage. Store in cool, dry, well-ventilated area away from sources of heat or direct sunlight. Do not allow areas where cylinders are stored to exceed 125°F. Use a check valve or trap in the cylinder discharge line to prevent hazardous backflow. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Keep oil, grease and all flammables away. Do not store with flammable gases. Open oxygen valves slowly.

OTHER PRECAUTIONS:
Use only DOT or ASME coded vessels. Use a pressure reducing regulator when connecting cylinder to lower pressure piping or systems. Oxygen equipment must be cleaned and degreased for oxygen service. Close valve after each use and when empty. Cylinders may not be refilled except by or with the consent of Liquid Carbonic. For further information refer to CGA Pamphlets P-1, G-4.1, and P-14 which have to do with cylinder handling, oxygen-rich atmospheres and cleaning for oxygen service.

(Continued on Supplemental Sheet)

SUPPLEMENTAL SHEET - OXYGEN MATERIAL SAFETY DATA SHEET

SECTION V--HEALTH HAZARD DATA - Continued

EMERGENCY AND FIRST AID PROCEDURES:

If Inhaled: Conscious persons should be assisted to an uncontaminated area and breathe fresh air. They should be kept warm and quiet. The physician should be informed that the victim is experiencing (has experienced) hyperoxia.

Unconscious persons should be moved to an uncontaminated area and given assisted respiration. When breathing has been restored, treatment should be as above. Continued treatment should be symptomatic and supportive.

CAUTION: Welding or brazing may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate ventilation. See ANSI Z-49.1 "Safety in Welding and Cutting" published by the American Welding Society and OSHA safety regulations under 29 CFR 1910.252 "Welding, Cutting and Brazing." Also see ACGIH TLVs 1991-1992 Appendix B, Section B2, "Welding Fumes." ARC RAYS can injure eyes and burn skin.

SECTION IX--SPECIAL PRECAUTIONS

OTHER PRECAUTIONS: (Continued)

Consult manufacturer's MSDS sheet on welding consumables and related products for reactivity and health hazard data, and for further information regarding welding fumes.

Reporting under SARA, Title III, Section 313 not required.

NFPA 704 NO. for gaseous oxygen = 0 0 0 (OX)