

UNION CARBIDE CORP/LINDE DIVISION -- LIQUID OXYGEN -- 9135-00-965-2527

=====
Product Identification
=====

Product ID:LIQUID OXYGEN

MSDS Date:09/01/1985

FSC:9135

NIIN:00-965-2527

MSDS Number: BHGRQ

=== Responsible Party ===

Company Name:UNION CARBIDE CORP/LINDE DIVISION

Address:39 OLD RIDGEBURY ROAD

City:DANBURY

State:CT

ZIP:06817

Info Phone Num:(800) 822-4357

Emergency Phone Num:(800) 822-4357

CA

GE:36346

=== Contractor Identification ===

Company Name:UNION CARBIDE CORP LINDE DIV

Address:39 OLD RIDGEBURY RD

Box:City:DANBURY

State:CT

ZIP:06817-0001

Country:US

Phone:800-822-4357; 304-744-3487

CAGE:36346

=====
Composition/Information on Ingredients
=====

Ingred Name:OXYGEN (GAS OR LIQUID)

CAS:7782-44-7

RTECS #:RS2060000

Fraction by Wt: 100%

=====
Hazards Identification
=====

Routes of Entry: Inhalation:YES Skin:YES Ingestion:NO

Rep

orts of Carcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:INGESTION/SKIN/EYES: SEVERE FROSTBITE
MAY RESULT FROM CONTACT W/LIQUID. NO HARMFUL EFFECTS EXPECTED FROM
VAPOR. INHALATION: NASAL STUFFINESS, BREATHING DIFFICULTY, LUNG
DAMAGE, CENTRAL NERVOUS SYSTEM EFFECTS, DIZZINESS, HEARING
DISTURBANCES, UNCONSCIOUSNESS & CONVULSIONS ARE CAUSE BY PROLONGED
BREATHING OF 80% OXYGEN.

Explanation of Carcinogenicity:NONE

Effects of Overexposure:INGESTION/SKIN/E

YES: SEVERE FROSTBITE MAY

RESULT FROM CONTACT W/LIQUID. NO HARMFUL EFFECTS EXPECTED FROM
VAPOR. INHALATION: NASAL STUFFINESS, BREATHING DIFFICULTY, LUNG
DAMAGE, CENTRAL NERVOUS SYSTEM EFFECTS, DIZZINESS, HEARING
DISTURBANCES, UNCONSCIOUSNESS & CONVULSIONS.

===== First Aid Measures =====

First Aid:SKIN: FLUSH FROSTBITE AREA W/WARM WATER. REMOVE & THOROUGHLY
WASH AIR CONTAMINATED CLOTHING. CALL PHYSICIAN. INHALATION: REMOVE
TO FRESH

AIR. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. KEEP

VICTIM WARM AND AT REST. CALL PHYSICIAN. EYES:FLUSH W/WATER FOR AT
LEAST 15 MINUTES. SEE PHYSICIAN.

===== Fire Fighting Measures =====

Extinguishing Media:OXIDIZING AGENT. USE MEDIA APPROPRIATE FOR
SURROUNDING FIRE. USE WATER FOR EXTINGUISHING MEDIA FOR CLOTHING
FIRES.

Fire Fighting Procedures:EVACUATE ALL PERSONNEL FROM DANGER AREA. COOL
CONTAINERS W/WATER SPRAY. DON'T DISCHARGE WATE
R SPRAYS INTO LIQUID
OXYGEN.

Unusual Fire/Explosion Hazard:OXIDIZING AGENT, VIGOROUSLY ACCELERATES
COMBUSTION. CONTACT W/FLAMMABLE MATERIALS MAY CAUSE FIRE/EXPLOSION.
CLOSED CONTAINER MAY RUPTURE DUE TO HEAT OF FIRE.

===== Accidental Release Measures =====

Spill Release Procedures:EVACUATE ALL PERSONNEL FROM DANGER AREA.
EXTREMELY COLD OXIDIZING LIQUID & GAS. ALLOW SPILLED LIQUID TO
EVAPORATE. DON'T WALK ON/ROLL EQUIPMENT OVER SPILL. SHUT OFF LEA

K

IF W/O RISK. VENTILATE AREA OF LEAK/MOVE LEAKING CONTAINER TO VENTILATED AREA.

=====
===== Handling and Storage =====

Handling and Storage Precautions:FOR STORAGE & USE AT CONSUMER SITES, REFER TO NFPA50, "BULK OXYGEN SYSTEMS", & NFPA 51, "OXYGEN-FUEL GAS SYSTEM FOR WELDING, CUTTING & ALLIED PROCESS.

Other Precautions:NEVER WORK ON A PRESSURIZED SYSTEM. IF THERE IS A LEAK, CLOSE THE CYLINDER VALVE, BLOW DOWN THE SYSTEM BY VENTING TO A SAFE PLACE. THEN REPAIR THE LEAK. NEVER LUBRICATE OXYGEN VALVES, REGULATORS, ETC. , W/ANY COMBUSTIBLE SUBSTANCE OR GREASE.

=====
===== Exposure Controls/Personal Protection =====

Ventilation:PROVIDE ADEQUATE MECHANICAL/LOCAL EXHAUST VENTILATION.

Protective Gloves:LOOSE-FITTING CRYOGENIC

Eye Protection:IN ACCORDANCE W/OSHA 29 CFR 1910.133

Other Protective Equipment:METATARSAL SHOES, CUFFLESS TROUSERS, HIGH TOP SHOES.

Work Hygienic Practices:DON'T GET LIQUID IN EYES, ON SKIN OR CLOTHING.

CLOTHING EXPOSED TO OXYGEN SHOULD BE REMOVED & AIRED OUT.

Supplemental Safety and Health

=====
===== Physical/Chemical Properties =====

Boiling Pt:B.P. Text:-297.4F

Melt/Freeze Pt:M.P/F.P Text:-361.1F

Vapor Pres:GAS

Vapor Density:1.105

Spec Gravity:1.141

Evaporation Rate & Reference:(BU AC = 1): HIGH

Appearance and Odor:LIGHT BLUE CRYOGENIC LIQUID, ODORLESS

Percent Volatiles by Volume:100%

=====
===== Stability and Reactivity Data =====

====

Stability Indicator/Materials to Avoid:YES

FLAMMABLE & COMBUSTIBLE MATERIALS, OILS & GREASES INCLUDING MANY MATERIALS NOT NORMALLY CONSIDERED FLAMMABLE.

Stability Condition to Avoid:HEAT. OXYGEN REACTS W/MANY MATERIALS.

SMOKING, FLAMES, & ELECTRIC SPARKS IN THE PRESENCE OF ENRICHED OXYGEN ATMOSPHERES.

Hazardous Decomposition Products:NONE

=====
===== Disposal Considerations =====

Waste Disposal Methods:KEEP PERSONNEL AWAY. LIQUID OXYGEN SHOULD BE

DUMPED INTO AN OUTDOOR PIT FILLED W/CLEAN, GREASEFREE & OIL-FREE GRAVEL, WHERE IT WILL SAFELY EVAPORATE.

Disclaimer (provided with this information by the compiling agencies):
This information is formulated for use by elements of the Department of Defense. The United States of America in no manner whatsoever, expressly or implied, warrants this information to be accurate and disclaims all liability for its use. Any person utilizing this document should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation.