

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

CAG

E: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

Repo

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/EY

ES: 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 A

IR. 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 WATER 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 LEAK

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 =====

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

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