

AIR PRODUCTS AND CHEMICALS INC. -- OXYGEN,LOX (LIQ ONLY); GOX (GAS ONLY) --
6830-00-656-1603

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

Product ID:OXYGEN,LOX (LIQ ONLY); GOX (GAS ONLY)

MSDS Date:02/01/1989

FSC:6830

NIIN:00-656-1603

MSDS Number: CCLSM

=== Responsible Party ===

Company Name:AIR PRODUCTS AND CHEMICALS INC.

Address:7201 HAMILTON BLVD

City:ALLENTOWN

State:PA

ZIP:18195-1501

Country:US

Info Pho

ne Num:800-752-1597

Emergency Phone Num:800-523-9374/610-481-7711

CAGE:00742

=== Contractor Identification ===

Company Name:AIR PRODUCTS AND CHEMICALS INC

Address:7201 HAMILTON BLVD

Box:City:ALLENTOWN

State:PA

ZIP:18195-1501

Country:US

Phone:800-345-3148/ 800-752-1597

CAGE:00742

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

Ingred Name:OXYGEN

CAS:7782-44-7

RTECS #:RS2060000

Other REC Limits:NONE RECOMMENDED

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

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LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.

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

Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:NON-TOXIC UNDER MOST CONDITONS OF USE.NECESSARY TO SUPPORT LIFE.LIQ OXY OR COLD GAS WILL FREEZE TISSUES & CAUSE SEVERE CRYOGENIC (EXTREMELY LOW TEMP)BURNS.BREATH PURE OXY PRODUCE COUGH,CHEST PAINS(60% CONC).PARTIAL PRESSURE IN EXCESS OF 2 ATM:CNS MANIFESTATIONS-TINGLING FINGERS/TO

ES,VISUAL/HEAR DISTURB,ABN (SIGN/SYMPT)

Explanation of Carcinogenicity:PER MSDS:OXYGEN ISNOT LISTED AS CARCINOGEN BY NTP/IARC/OSHA.

Effects of Overexposure:SENS,IMPAIRED COORDINATION,CONFUSION,MUSCLE TWITCHING,SEIZURES RESEMBLING EPILEPSY.SEVERE HAZ MAY BE PRESENT WHEN CONFUSION/IMPAIR JUDGMENT LEAD TO OPERATIONAL ERRORS.INFANTS EXPO TO 35-40% MAY SUFFER PERM VISUAL IMPAIRM/BLIND DUE TO RETROLENTAL FIBROPLASIA.

Medical Cond Aggravated by Exposure:NONE SPECIFIED BY MANUFACTUR ER.

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

First Aid:IF CRYOGENIC LIQ/COLD BOIL-OFF GAS CONTACT SKIN/EYE FROZEN TISSUES SHOULD BE FLOODED/SOAKED W/TEPID WATER(105-115F).DO NOT USE HOT WATER.BURNS WHICH RESULT IN BLISTERING/DEEPER TISSUE FREEZING SHOULD BE SEEN PROMPTLY BY PHYSICIAN.

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

Flash Point:NA

Autoignition Temp:Autoignition Temp Text:NA

Lower Limits:NA

Upper Limits:NA

Fire Figh

ting Procedures:OXY NONFLAMM BUT SUPPORT & VIOGROUSLY ACCELERATES COMSUT OF FLAMM.TO FIGHT FIRES SHUT OFF SOURCES OF OXY & FIGHT LIKE CONVENTIONAL FIRE.

Unusual Fire/Explosion Hazard:OXY NONFLAMM BUT SUPPROTS & VIGOROUSLY ACCELERATES COMBUST OF FLAMM.SOME MATLS WHICH ARE NONCOMBUSTIBLE IN AIR WILL BURN IN PRESENCE OF OXYGEN.

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

Spill Release Procedures:PREVENT FROM COTNACTING GREASE/OIL/ASPHALT/COMBUSTIBLES.VE

NTI TO EVAPORATE/DISPERSE

OXY.FLUSH W/LG QUANT OF WATER.DON'T ENTER AREAS OF HI OXY
CONC-SATURATE CLOTH/INCR FLAMM.AVOID SMOKEING/CONTACT W/IG N
SOURCES AFT EXPO TO CONC OXYGEN.

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

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

Handling and Storage Precautions:PREVENT ENTRAPMENT IN CLSD SYS.USE
ONLY IN WELL VENTI AREAS.CLEANLINESS/COMPATI OF MATL W/OXY CONTACT
ESSENTIAL ESPECIALLY INTERNAL PIPING SYS PARTS

Other Precautions:USE PRESSURE-RED REG WHEN CONNECTING TO LOWER
PRESSURE.SECURE CYL WHEN IN UE.NEVER USE DIRECT FLAME TO HEAT
CYL.USE CHECK VALVE TO PREVENT BACKFLOW INTO STORAGE CNTNR.AVOID
DRAG/ROLL/SLIDE CYL SHORT D ISTANCE;USE HAND TRUCK.

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

Ventilation:PREVENT ACCUMULATION W/NATURAL/FORCED AIR.LOC
EXHAU/MECH(GEN):AS NECESSARY.VENTS SHOULD BE SITUATED TO AVOID
HIGHER(SUP)

Protective Gloves:LIQ:LOOSE FIT
IMPERM MATL-LEATHER.(SUPP)

Eye Protection:LIQ:CHEM GOGG,SAF GLASSES.GAS:SAF GLASS

Work Hygienic Practices:PREVENT SKIN CONTACT.CONSULT COMPRESSED GAS
ASSOC PAMPHLET P-1,DOT REGS FOR SHIPMENT,DOT SPEC FOR CNTNR/ASME
CODES.

Supplemental Safety and Health

DISPO:GAS CYL.RETURN CYL TO AIR PRODUCTS W/RESIDUAL PRESSURE/CYL VALVE
TIGHTLY CLSD/VALVE CAP IN PLACE. VENTI:THAN NORMAL CONC OF OXY IN
WORKAREAS. GLOVES:GAS:LEATEHR WORK GLOVES WHEN HNDLG GAS CYL.

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

HCC:G4

Boiling Pt:B.P. Text:-297F,-183C

Melt/Freeze Pt:M.P/F.P Text:-361F,-218C

Decomp Temp:Decomp Text:NP

Vapor Pres:NA

Vapor Density:.08279

Spec Gravity:1.14 @BPT,1ATM

pH:NP

Viscosity:NP

Evaporation Rate & Reference:NP

Solubility in Water:3.16%@77F,1ATM.

Appearance and Odor:GASEOUS OXYGEN IS COLORLESS & ODORLESS. LIQ OZY IS
PALE BLUE & ODORLESS.

Percent Volatiles by Volume:NP

Corrosion Rate:NP

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

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Stability Indicator/Materials to Avoid: YES

ALL FLAMMABLES ESPECIALLY PETROLEUM PRODUCTS, ASPHALT, OTHER VOLATILE FLAMMABLES.

Stability Condition to Avoid: MATLS WHICH BURN IN AIR WILL BURN

VIOLENTLY IN ATM RICHER THAN APPROX 25% OXY. SOME MATLS NONFLAMM IN AIR BURN IN PURE OXY

Hazardous Decomposition Products: NONE.

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

Waste Disposal Methods: ALLOW TO EVAPORATE IN WELL VENTI OUTDOOR AREA. VENT GAS TO OUTS

IDE LOCATION. DISPO SITE SHOULD BE REMOTE FROM

WORKAREA/OPN FLAME/IGN SOURCE/COMBUST. FLUSH W/WATER WILL INCR VAPORIZATION RATE OF LIQ. DON'T ATTEMPT TO DIPSO RESIDUAL OXY IN COMPRESSED(SUPP)

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