

AIR PRODUCTS AND CHEMICALS INC -- HELIUM, OR LIQUID HELIUM -- 6830-01-008-3431

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

Product ID:HELIUM, OR LIQUID HELIUM
MSDS Date:06/01/1990
FSC:6830
NIIN:01-008-3431
MSDS Number: BGCYF
=== Responsible Party ===
Company Name:AIR PRODUCTS AND CHEMICALS INC
Address:7201 HAMILTON BLVD
Box:538
City:ALLENTOWN
State:PA
ZIP:18195-1501
Country:US
Info Phone Num:215-481-6311
E
mergency Phone Num:800-523-9374
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:HELIUM; (INERT GAS)
CAS:7440-59-7
RTECS #:MH6520000
OSHA PEL:N/K
ACGIH TLV:N/K

Ingred Name:SUPDAT:TO AIR PRODS W/RESIDUAL PRESS, CYL VALVE TIGHTLY
CLSD & VALVE CAP

IN PLACE.
RTECS #:9999999ZZ

Ingre
d Name:OTHER PREC:FLOW INTO STOR CNTNR. AVOID DRAGGING,
ROLLING/SLIDING CYLS, EVEN FOR SHORT DIST. USE SUITABLE HAND (ING
4)
RTECS #:9999999ZZ

Ingre
d Name:ING 3:TRUCK. FOR ADDNL HNDLG REC ON COMPRESSED GAS CYLS,
CONSULT COMPRESSED GAS ASSOC PAMPHLET P-1. STORE LIQ (ING 5)
RTECS #:9999999ZZ

Ingre
d Name:ING 4:CNTNRS & CYLS IN WELL-VENT AREAS. KEEP CYLS AWAY FROM
SOURCES OF HEAT. STOR SHOULD NOT BE IN HEAVY TRAFFIC (ING 6)
RTECS #:9999999ZZ

Ingre
d Name:ING 5:AREAS TO PVNT ACCIDENTAL KNOCKING OVER/DMG FROM
PASSING/FALLING OBJECTS. VALVE CAPS SHOULD REMAIN ON CYLS (ING 7)
RTECS #:9999999ZZ

Ingre
d Name:ING 6:NOT CONNECTED FOR USE. SEGREGATE FULL & EMPTY CYLS.
STOR AREAS SHOULD BE FREE OF COMBUST MATL. AVOID EXPOS (ING 8)
RTECS #:9999999ZZ

Ingre
d Name:ING 7:TO AREAS WHERE SALT/CORR CHEMS ARE PRESENT. GASEOUS
HELIUM CNTNRS MEET DOT SPECIFICATION/AMERICAN SOCIETY (ING 9)
RTECS #:9999999ZZ

Ingre
d Name:ING 8:OF MECHANICAL ENGINEE
RS (ASME) CODES. LIQ HELIUM IS
STORED IN VACUUM-INSULATED CNTNRS MEETING DOT (ING 10)
RTECS #:9999999ZZ

Ingre
d Name:ING 9:SPECIFICATIONS/ASME CODES. LIQ HELIUM IN EXPOS PIPING
CAN ACTUALLY CAUSE AIR TO CONDENSE & LIQUEFY. (ING 11)
RTECS #:9999999ZZ

Ingre
d Name:ING 10:NITROGEN IN THIS LIQ CAN EVAP MORE RAPIDLY, LEAVING
OXYG ENRICHED LIQ BEHIND. UTILIZE OXYG-COMPAT (ING 12)
RTECS #:9999999ZZ

Ingre
d Name:ING 11:INSULATING MATLS & MINIMIZE EXPOS PIPING SURF AREAS.
USE ONLY METALS

& MATLS COMPAT W/EXTREMELY LOW TEMP.(ING 13)
RTECS #:9999999ZZ

Ingred Name:ING 12:AVOID USE OF CARBON STEEL & OTHER METALS WHICH
BECOME BRITTLE @ LOW TEMPS. COMPRESSED GAS CYLS SHOULD NOT(ING 14)
RTECS #:9999999ZZ

Ingred Name:ING 13:BE REFILLED EXCEPT BY QUALIFIED PRODUCERS OF
COMPRESSED GASES. SHIPMENT OF COMPRESSED GAS CYL FILLED (ING 15)
RTECS #:9999999ZZ

Ingred Name:ING 14:W/OUT PERMISSION OF OWNER IS VIOLATION OF FEDERAL
LAW. IF OXYG DEFICIENT ATM ARE SUSPECTED/CAN OCCUR, (IN
G 16)
RTECS #:9999999ZZ

Ingred Name:ING 15:USE OXYG MONITORING EQUIP TO TEST FOR OXYG DEFICIENT
ATM.
RTECS #:9999999ZZ

Ingred Name:VENT:NORMAL CONCENTRATION OF HELIUM IN WORK AREAS.
RTECS #:9999999ZZ

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

LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.

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

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

Health Hazards Acute and Chronic:HELIUM IS NONTOXIC, BUT CAN ACT
AS

SIMPLE ASPHYXIANT BY DISPLACING AMT OF OXYG IN AIR NEC TO SUPPORT
LIFE. HELIUM IS ODORLESS & NONTOXIC, BUT MAY PRDCE SUFFOCATION BY
DILUTING CONC OF OXYG IN AIR BELO W LEVELS NEC TO SUPPORT LIFE.
PERS, INCLUDING RESCUE WORKERS, SHOULD NOT ENTER AREAS WHERE OXYG
CONC IS(EFTS OF OVEREXP)

Explanation of Carcinogenicity:NOT RELEVANT.

Effects of Overexposure:HLTH HAZ:BELOW 19.5%, UNLESS PROVIDED
W/SCBA/AIRLINE RESP. EXPOS TO OXYG-DEFICIENT ATMOSPHERES MAY PRDCE
DIZZ, N

AUS, VOMIT, LOSS OF CONSCIOUSNESS, & DEATH. DEATH MAY RSLT
FROM ERRORS IN JUDGMENT, CONF USION/LOSS OF CONSCIOUSNESS WHICH
PVNTSSELF-RESCUE. AT LOW OXYG CONCS UNCONSCIOUSNESS & DEATH MAY
OCCUR IN (SUPDAT)

Medical Cond Aggravated by Exposure:NONE SPECIFIED BY MANUFACTURER.

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

First Aid:INGEST:CALL MD IMMEDIATELY . PERSONS SUFFERING FROM LACK OF
OXYG SHOULD BE MOVED TO AREAS W/NORM ATMOSPHERES. SCBA MAY BE REQD

TO PVNT ASPHY OF RESCUE WORKERS. ASSISTED RESP & SUPP OXYG SHOULD B
E GIVEN IF VICTIM IS NOT BRTHG. IF CRYOGENIC LIQ/COLD BOIL-OFF GAS
CONTACTS WORKER'S SKIN/EYES, FROZEN TISS SHOULD BE FLOODED/SOAKED
W/TEPID WATER (105-115F; 41-46C). DO NOT USE HOT WATER. (SUPDAT)

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

Extinguishing Media:NOT APPLICABLE. MEDIA SUITABLE FOR SURROUNDING FIRE

Fire Fighting Procedures:NOT APPLICABLE. USE NIOSH/MSHA APPROVED SCBA &
FULL PROTECTIVE EQUIPMENT .

Unusual Fire/Explosion Hazard:CYLINDER(S) EXPOSED TO INTENSE HEAT OR
FIRE MAY VENT RAPIDLY OR EXPLODE.

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

Spill Release Procedures:AVOID SKIN CONTACT WITH LIQUID OR COLD
BOIL-OFF GAS. FLUSH LIQUID SPILL WITH WATER TO DISPERSE. VENTILATE
ENCLOSED AREAS TO PREVENT FORMATION OF OXYGEN-DEFICIENT ATMOSPHERES
CAUSED BY EVAPORATION OF L IQUID HELIUM OR THE RELEASE OF GASEOUS
HELIUM.

Ne
utralizing Agent:NONE SPECIFIED BY MANUFACTURER.

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

Handling and Storage Precautions:PVNT CONT OF LIQ HELIUM/COLD BOIL-OFF
GAS W/EXPOSED SKIN. PVNT ENTRAPMENT OF LIQ IN CLSD SYS. USE ONLY IN
WELL-VENTILATED AREAS.

Other Precautions:COMPRESSED GAS CYLS CONTAIN HELIUM AT EXTREMELY HIGH
PRESS & SHOULD BE HANDLED W/CARE. USE A PRESS-REDUCING REGULATOR
WHEN CONNECTING TO LOWER PRESS PIPING SYS. SECURE CYLS WHEN IN USE.

NEVER USE DIRE CT FLAME TO HEAT A COMPRESSED (ING 2)

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

Respiratory Protection:NIOSH/MSHA APPRVD SCBA IN OXYG-DEFICIENT
ATMOSPHERES. CAUTION! AIR PURIFYING RESPIRATORS WILL NOT FUNCTION.
THEIR USE MAY RESULT IN ASPHYXIATION.

Ventilation:NATRL/MECH WHERE GAS IS PRESENT. LOC/MECH (GEN):AS NEC.
VENTS SHOULD BE SITUATED TO AVOID HIGHER THAN NORM CONC (ING 17)

Protective Gloves:LEATHER

Eye Protection:CHEM GOGGLES & FA

CESHIELD.

Other Protective Equipment:NONE

Work Hygienic Practices:NONE SPECIFIED BY MANUFACTURER.

Supplemental Safety and Health

EFFECTS OF OVEREXPOSURE:SEVERE WITHOUT WARNING. EXTENSIVE TISSUE DAMAGE/BURNS CAN RESULT FROM EXPOSURE TO LIQUID HELIUM/COLD HELIUM VAPORS. FIRST AID PROCEDURE:CRYOGENIC BURNS WHICH RESULT IN BLISTERING/DEEPER TISSUE FREEZING SHOULD BE SEEN PROMPTLY BY PHYSICIAN. WASTE DISPOSAL METHOD:TO AIR PROCEEDS WITH RESIDUAL PRESSURE, THE CYLINDER VALVE TIGHTLY CLOSED & VALVE CAP IN PLACE.

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

Boiling Point:Boiling Point Text:-452F,-269C

Melt/Freeze Point:Melt/Freeze Point Text:-458F,-272C

Vapor Density:0.0114@32F

Specific Gravity:0.138 @ 32F

Evaporation Rate & Reference:NOT KNOWN

Solubility in Water:0.861% @ 68F

Appearance and Odor:HELIUM IS COLORLESS AND ODORLESS IN BOTH GASEOUS AND LIQUID STATES.

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

Stability Indicator/Materials to Avoid:YES
NONE.

Stability Condition to Avoid:NONE.

Hazardous Decomposition Products:NONE

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

Waste Disposal Methods:ALLOW LIQUID HELIUM TO EVAPORATE IN WELL-VENTILATED LOCATION REMOTE FROM WORK AREAS. VENT HELIUM GAS SLOWLY TO WELL-VENTILATED OUTDOOR LOCATION REMOTE FROM WORK AREAS. DO NOT ATTEMPT TO DISPOSE OF RESIDUAL HELIUM IN COMPRESSED GAS CYLINDERS. RETURN CYLINDERS (SUPPLY DATA)

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