

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 LIQUID 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

CE SHIELD.

Other Protective Equipment:NONE

Work Hygienic Practices:NONE SPECIFIED BY MANUFACTURER.

Supplemental Safety and Health

EFFECTS OF OVEREXPOSURE:SEVERE W/OUT 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:B.P. Text:-452F,-269C

Melt/Freeze Point:M.P/F.P 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)

Disclaimer (provided with this information by the compiling agencies):  
This information is formulated for use by element

nts 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.