

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

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Product Identification  
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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:215-481-631

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Emergency 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

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Composition/Information on Ingredients  
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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 C

AP IN PLACE.  
RTECS #:9999999ZZ

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

Ingred 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

Ingred 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

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

Ingred 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

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

Ingred Name:ING 8:OF MECHANICAL ENGI  
NEERS (ASME) CODES. LIQ HELIUM IS  
STORED IN VACUUM-INSULATED CNTNRS MEETING DOT (ING 10)  
RTECS #:9999999ZZ

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

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

Ingred Name:ING 11:INSULATING MATLS & MINIMIZE EXPOS PIPING SURF AREAS.  
USE ONLY META

LS & 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,  
(ING 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

, NAUS, 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 BE 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)

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Fire Fighting Measures  
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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.

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Accidental Release Measures  
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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 LIQUID HELIUM OR THE RELEASE OF GASEOUS HELIUM.

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

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Handling and Storage  
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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 DIRECT FLAME TO HEAT A COMPRESSED (ING 2)

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Exposure Controls/Personal Protection  
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Respiratory Protection:NIOSH/MSHA APPROVD 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 &

FACESHIELD.

Other Protective Equipment:NONE

Work Hygienic Practices:NONE SPECIFIED BY MANUFACTURER.

Supplemental Safety and Health

EFFECTS OF OVEREXPOSURE:SECS 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 PRODUCTS 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 (SUPPLIER)

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