

HYDROGEN

MSDS Number

BHDNB

National Stock Number

6830-00-531-8097

Product Name

HYDROGEN

Manufacturer

AIR PRODUCTS AND CHEMICALS INC

Product Identification

Product ID:HYDROGEN
MSDS Date:07/10/1986
FSC:6830
NIIN:00-531-8097
MSDS Number: BHDNB

Responsible Party

AIR PRODUCTS AND CHEMICALS, INC.
2043 S 35TH ST
TACOMA , WA 98411-0393
US
Cage: 00742

Contractor

OXYGEN SALES AND SERVICE INC
11393
TACOMA, WA 98411-0393
US
800-345-3148/ 800-752-1597
Cage: 5H199

Ingredients

HYDROGEN
CAS: 1333-74-0
RTECS: MW8900000

Hazards

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:HYDROGEN IS NONTOXIC AND CLASSIFIED AS A SIMPLE ASPHYXIAN, BUT IT IS EXTREMELY FLAMMABLE. THE AMOUNT OF HYDROGEN GAS NECESSARY TO REDUCE OXYGEN CONCENTRATIONS BELOW LIFE SUPPORT LEVELS IS WELL W/IN THE FLAMMABLE RANGE. DO NOT ENTER AREAS CONTAINING FLAMMABLE MIXTURES DUE TO THE IMMEDIATE FIRE & EXPLOSION HAZARD.
Effects of Overexposure:SYMPTOMS OF ANOXIA OCCUR ONLY WHEN GAS CONCENTRATIONS ARE WITHIN FLAMMABLE RANGE& THE MIXTURE HAS NOT IGNITED. CONTACT OF SKIN W/LIQ HYDROGEN OR COLD GAS VAPORS CAN CAUSE CRYOGENIC BURNS & FREEZE TISSUES.

First Aid

First Aid:IF CRYOGENIC LIQ OR COLD BOIL-OFF GAS CONTACTS WORKER'S SKIN

OR EYES, FROZEN TISSUES SHOULD BE FLOODED OR SOAKED W/TEPID WTR.DO NOT USE HOT WTR.CRYOGENIC BURNS WHICH RESULT IN BLISTERING OR DEEPER TIS SUE FREEZING SHOULD BE SEEN PROMPTLY BY A PHYSICIAN.PERSON SUFFERING FROM LACK OF OXYGEN SHOULD BE MOVED TO AREA W/NORMAL ATMOSPHERE.ASSISTED RESPIRATION & SUPPLEMENTAL OXYGEN FOR PERSON NOT BREATHING

Fire Fighting

Flash Point:NA
Autoignition Temp:Autoignition Temp Text:932F
Lower Limits:74.2%
Upper Limits:4.0%
Extinguishing Media:DRY CHEMICAL, CARBON DIOXIDE, OR HALON.
Fire Fighting Procedures:SHUT OFF SOURCE OF HYDROGEN.WHEN POSSIBLE,ALLOW FIRE TO BURN ITSELF OUT.SPRAY WTR ON ADJOINING EQUIP TO KEEP IT COOL.
Unusual Fire/Explosion Hazard:HYDROGEN CAN BURN W/ALMOST AN INVISIBLE FLAME OF LOW THERMAL RADIATION.PEOPLE HAVE UNKNOWNLY WALKED INTO HYDROGEN FLAMES.

Accidental Release

Spill Release Procedures:DO NOT ENTER AREAS CONTAINING FLAMMABLE MIXTURES OF HYDROGEN IN AIR.AVOID CONTACT OF SKIN W/LIQ HYDROGEN OR COLD BOIL-OFF GA.VENTILATE ENCLOSED AREAS TO PREVENT FORMATION OF FLAMMABLE OR OXY-DEFICIENT ATMOSPHERES.ELIMINATE ALL POTENTIAL SOURCES OF IGN

Handling

Handling and Storage Precautions:USE ONLY IN WELL VENTILATED AREA.DO NOT DRAG,ROLL,OR SLIDE CYLS.USE SUITABLE HAND TRUCK.KEEP CYLS AWAY FROM HEAT.SEGREGATE FULL/EMPTY CYLS.
Other Precautions:LIQ HYDROGEN IN EXPOSED PIPING CAN ACTUALLY CAUSE AIR TO CONDENSE & LIQUEFY.THE NITROGEN IN THIS LIQ CAN EVAPORATE MORE RAPIDLY,LEAVING AN OXY ENRICHED LIQ BEHIND.UTILIZE OXY-COMPATIBLE INSULATING MAT ERIALS & MINIMIZE EXPOSED PIPING SURFACE

Exposure Controls

Respiratory Protection:OXYGEN-DEFICIENT ATMOSPHERES ARE IN THE FLAMMABLE RANGE.DO NOT ENTER.
Ventilation:NATURAL/MECHANICAL WHERE GAS OR VAPOR PRESENT.
Protective Gloves:LOOSE FITTING IMPERMEABLE
Eye Protection:SAFETY GLASSES/GOGGLES
Other Protective Equipment:NONE
Supplemental Safety and Health
VENTILATION:MECHANICAL VENTILATION MUST MEET NATIONAL ELECTRIC CODE (NEC) REQUIREMENTS FOR CLASS I, GROUP B.

Chemical Properties

Boiling Pt:B.P. Text:-4233.0F
Vapor Pres:NA
Vapor Density:@68F 20C
Spec Gravity:@68F 20C
Solubility in Water:@68F 20C
Appearance and Odor:BOTH LIQUID & GASEOUS HYDROGEN ARE COLORLESS & ODORLESS.

Stability

Stability Indicator/Materials to Avoid:YES
OXIDIZING MATERIALS.SOME STEELS ARE SUSCEPTIBLE TO HYDROGEN ATTACK OR EMBRITTLEMENT AT HIGH TEMPERATURE & PRESSURE.
Stability Condition to Avoid:SOURCES OF IGNITION,SPARKS,FLAMES,HOT OBJECTS.
Hazardous Decomposition Products:NONE

Disposal

Waste Disposal Methods:DO NOT ATTEMPT TO DISPOSE OF RESIDUAL GASEOUS HYDROGEN IN CYLS.RETURN CYLS TO AIR PRODUCTS W/POSITIVE RESIDUAL

PRESSURE,CYLINDER VALVES TIGHTLY CLOSED& VALVE CAP IN PLACE.DO NOT DISPOSE OF LIQ HYDROGE N-CONTACT AIR PRODUCTS FOR ASSISTANCE.

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