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MATERIAL SAFETY DATA SHEET

PROTEC 1, 2, 3 & 19

Rev. Date 03/01/04

Emergency Phone Number: 216-642-6600

SECTION #1 - IDENTIFICATION

Product: PROTEC 1, 2, 3 & 19

CAS Number: Not Established
MSDS CODE: 209
Chemical Family: Gas Mixture
Chemical Formula: Argon: 15–98%; Carbon dioxide: 2–85%

Synonyms: ARGON IN CO2 MIXTURES
209

Hazard Rating - Health: 1 Slight
- Fire: 0 Negligible
- Reactivity: 0 Negligible

SECTION #2 - CHEMICAL COMPONENTS

Component: ARGON
CAS Number: 7440-37-1
Percent of Mixture: 15.0000 to 95.0000
OSHA PEL
ACGIH TLV
Simple Asphyxiant

Component: CARBON DIOXIDE
CAS Number: 124-38-9
OSHA 8 HR TWA (Final) 10,000 PPM
ACGIH TLV TWA: 5000 PPM
IDLH: 50,000 PPM
Percent of Mixture: 5.0000 to 85.0000
OSHA PEL STEL (Final) 30,000 PPM
ACGIH STEL: 30,000 PPM

SECTION #3 - PHYSICAL DATA

Vapor Density (Air = 1): 1.40
Solubility (H2O): Slight

APPEARANCE

Colorless.

ODOR

Odorless.

SECTION #4 - FIRE FIGHTING & EXPLOSION DATA

Flash Point: NONE°F

FIRE AND EXPLOSION HAZARDS

Electrical Classification: Nonhazardous.

EXTINGUISHING MEDIA

Nonflammable. Inert gas.

SECTION #5 - EXPOSURE AND EFFECTS - INHALATION

ROUTES OF EXPOSURE - INHALATION

Carbon dioxide is the most powerful vasodilator known. Inhaling large concentrations cause rapid circulatory insufficiency leading to coma and death. Chronic harmful effects are not known from repeated inhalation of low concentrations (20–30%) concentrations of these mixtures. Concentrations of (20–30%) of these mixtures when inhaled with adequate oxygen in the air will cause an increase in the respiratory rate. Higher concentrations will cause headaches, dizziness, labored breathing and eventual unconsciousness.

FIRST AID - INHALATION

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO THESE MIXTURES. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Victims should be assisted to uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious should be moved to an uncontaminated area, and if breathing has stopped administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

SECTION #5 - MISCELLANEOUS TOXICOLOGICAL INFORMATION

Carcinogenicity: NTP - No IARC - No OSHA - No

SECTION #6 - REACTIVITY & POLYMERIZATION

Stability: Stable

INCOMPATIBLE MATERIALS

None

HAZARDOUS DECOMPOSITION PRODUCTS

None

Hazardous Polymerization: Will not occur

SECTION #7 - SPILL, LEAK, & DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF SPILLS, LEAKS, OR RELEASE

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact Linde for emergency assistance.

WASTE DISPOSAL METHODS

Do not attempt to dispose of residual or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Linde for proper disposal.

SARA Hazard Classes: Sudden Release of Pressure Hazard

SECTION #8 - SPECIAL PROTECTIVE MEASURES

VENTILATION

Use Local exhaust to prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 19.5 molar percent, and to prevent the accumulation of Carbon Dioxide above its exposure limit.

EYE PROTECTION

Safety goggles or glasses.

SKIN PROTECTION

Protective gloves of any suitable material.

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RESPIRATORY PROTECTION

An airline respirator with full face piece equipped with an escape bottle or a Self Contained Breathing Apparatus should be available for emergency use. Operate this equipment in the positive pressure demand mode. PPD!

OTHER PROTECTION

Safety shoes.

SECTION #9 - SPECIAL PRECAUTIONS - STORAGE & HANDLING

STORAGE & HANDLING CONDITIONS

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the system.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

For additional storage recomendations, consult Compressed Gas Association's Pamphlets P-1 and Safety Bulletin SB-7.

SECTION #10 - SHIPPING INFORMATION

Proper Shipping Name: Compressed Gas, N.O.S.

Hazard Class: Nonflammable gas
DOT Identification Number: UN1956
DOT Shipping Label: Nonflammable Gas

SECTION #11 - MISC COMMENTS & REFERENCE DOCUMENTATION

These mixtures are noncorrosive and may be used with any common structural material.

Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Federal Law (49CFR).

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