

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MG INDUSTRIES
3 GREAT VALLEY PARKWAY
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SUBSTANCE: ARGON, REFRIGERATED LIQUID (CRYOGENIC LIQUID)

TRADE NAMES/SYNONYMS:
ARGON, REFRIGERATED LIQUID; ARGON, CRYOGENIC LIQUID; ARGON; STCC 4904503; UN 1951; AR; MGIO1861; RTECS CF2300000

CHEMICAL FAMILY: non-metallic

CREATION DATE: May 04 1990
REVISION DATE: Sep 16 2002

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: ARGON, REFRIGERATED LIQUID (CRYOGENIC LIQUID)
CAS NUMBER: 7440-37-1
EC NUMBER (EINECS): 231-147-0
PERCENTAGE: 100.0

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:

PHYSICAL DESCRIPTION: Odorless, tasteless, colorless liquified gas.

MAJOR HEALTH HAZARDS: difficulty breathing

PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: nausea, vomiting, dizziness, tingling sensation, suffocation, convulsions, coma

LONG TERM EXPOSURE: no information on significant adverse effects

SKIN CONTACT:

SHORT TERM EXPOSURE: blisters, frostbite

LONG TERM EXPOSURE: no information is available

EYE CONTACT:

SHORT TERM EXPOSURE: frostbite, blurred vision

LONG TERM EXPOSURE: no information is available

INGESTION:

SHORT TERM EXPOSURE: frostbite

LONG TERM EXPOSURE: no information is available

CARCINOGEN STATUS:

OSHA: No

NTP: No
IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

EYE CONTACT: Flush eyes with plenty of water.

INGESTION: If a large amount is swallowed, get medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Containers may rupture or explode if exposed to heat.

EXTINGUISHING MEDIA: Use extinguishing agents appropriate for surrounding fire.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Do not get water directly on material. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Do not touch spilled material. Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
 ARGON REFRIGERATED LIQUID (CRYOGENIC LIQUID):

ARGON
 ACGIH (simple asphyxiant)
 UK OES (simple asphyxiant)

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

GLOVES: Wear insulated gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use:
 For Unknown Concentrations or Immediately Dangerous to Life or Health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
 Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Odorless, tasteless, colorless liquified gas.

MOLECULAR WEIGHT: 39.848
 MOLECULAR FORMULA: AR
 BOILING POINT: -303 F (-186 C)
 FREEZING POINT: -308 F (-189 C)
 VAPOR PRESSURE: 500 mmHg @ -190 C
 VAPOR DENSITY (air=1): 1.380
 SPECIFIC GRAVITY (water=1): 1.40 @ -186 C
 WATER SOLUBILITY: 3.36% @ 20 C
 PH: Not applicable
 VOLATILITY: Not applicable
 ODOR THRESHOLD: Not available
 EVAPORATION RATE: Not applicable
 VISCOSITY: 0.283 cP @ -189 C
 COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. Avoid contact with water or moisture.

INCOMPATIBILITIES:

ARGON:
 No data available.

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

HEALTH EFFECTS:

INHALATION:
 ARGON: See information on simple asphyxiants.

ACUTE EXPOSURE:
 SIMPLE ASPHYXIANTS: The symptoms of asphyxia depend on the rapidity with which the oxygen deficiency develops and how long it continues. In sudden acute asphyxia, unconsciousness may be immediate. With slow development there may be rapid respiration and pulse, air hunger, dizziness, reduced awareness, tightness in the head, tingling sensations, incoordination, faulty judgement, emotional instability, and rapid fatigue. As the asphyxia progresses, nausea, vomiting, collapse, unconsciousness, convulsions, deep coma and death are possible.

CHRONIC EXPOSURE:
 SIMPLE ASPHYXIANTS: No data available.

SKIN CONTACT:

ACUTE EXPOSURE:
 ARGON: No adverse effects have been reported from the gas. Due to rapid evaporation, the cryogenic liquid may cause frostbite with redness, tingling and pain or numbness. In more severe cases, the skin may become hard and white and develop blisters.

CHRONIC EXPOSURE:
 ARGON: No data available.

EYE CONTACT:

ACUTE EXPOSURE:
 ARGON: No adverse effects have been reported from the gas. Due to evaporation, the cryogenic liquid may cause frostbite with redness, pain, and blurred vision.

CHRONIC EXPOSURE:
 ARGON: No data available.

INGESTION:

ACUTE EXPOSURE:
 ARGON: Ingestion of a gas is unlikely. If the cryogenic liquid is swallowed, frostbite damage to the lips, mouth and mucous membranes may occur.

CHRONIC EXPOSURE:
 ARGON: No data available.

SECTION 12 ECOLOGICAL INFORMATION

Not available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
 PROPER SHIPPING NAME: Argon, refrigerated liquid (cryogenic liquid)
 ID NUMBER: UN1951
 HAZARD CLASS OR DIVISION: 2.2

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
 SHIPPING NAME: Argon, refrigerated liquid
 ID NUMBER: UN1951
 CLASSIFICATION: 2.2

LAND TRANSPORT ADR/RID:
 PROPER SHIPPING NAME: Argon, refrigerated liquid
 UN NUMBER: UN1951
 ADR/RID CLASS: 2
 CLASSIFICATION CODE: 3A

AIR TRANSPORT IATA/ICAO:
 PROPER SHIPPING NAME: Argon, refrigerated liquid
 UN/ID NUMBER: UN1951
 IATA/ICAO CLASS: 2.2

MARITIME TRANSPORT IMDG:
 PROPER SHIPPING NAME: Argon, refrigerated liquid
 UN NUMBER: UN1951
 IMDG CLASS: 2.2

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:
 CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.
 SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):
 Not regulated.
 SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
 Not regulated.
 SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
 ACUTE: Yes
 CHRONIC: No
 FIRE: No
 REACTIVE: No

SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
 California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
 WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
 EC CLASSIFICATION (CALCULATED): Not determined.

GERMAN REGULATIONS:
 WATER HAZARD CLASS (WGK):
 STATE OF CLASSIFICATION: VwVwS
 CLASSIFICATION UNDER HAZARD TO WATER: 0

NATIONAL INVENTORY STATUS:
 U.S. INVENTORY (TSCA): Listed on inventory.
 TSCA 12(b) EXPORT NOTIFICATION: Not listed.

SECTION 16 OTHER INFORMATION

MSDS SUMMARY OF CHANGES
 SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION
 SECTION 14 TRANSPORT INFORMATION

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