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MSDS: Halocarbon 12

PRODUCT INFORMATION

PRODUCT: Halocarbon 12

TRADE NAME: Halocarbon 12 or Freon® 12

CHEMICAL NAME: Dichlorodifluoromethane

SYNONYMS: R-12 or Refrigerant 12

FORMULA: CCl₂F₂

CHEMICAL FAMILY: Halogenated Hydrocarbon

SUPPLIER'S NAME: MEGS Inc.

SUPPLIER'S ADDRESS: 2675 De Miniac
Ville St-Laurent, Qc, H4S 1E5

EMERGENCY PHONE NUMBER: (514) 956-7503

MOLECULAR WEIGHT: 120.91

PRODUCT USE: Various

**PRODUCT IDENTIFICATION UN 1028
NUMBER:**

HAZARDOUS INGREDIENTS

CHEMICAL ID	CONCENTRATION	CAS #	LD(50)	LC(50)
Halocarbon 12	100%	75-71-8	None	Inhl-Rat 80 pph/30 min

PHYSICAL DATA

PHYSICAL STATE: Gas and liquid under pressure

APPEARANCE: Colorless gas and liquid

ODOR: Slight ethereal odor

ODOR THRESHOLD: Unknown

SPECIFIC GRAVITY (H₂O = 1): 1.34
VAPOR PRESSURE: 491 kPa
VAPOR DENSITY (air = 1): 4.32
EVAPORATION RATE: Unknown
BOILING POINT: -29.78°C
FREEZING POINT: -157.78°C
pH: Unknown
GAS DENSITY: 5.58 kg/m³ (vapor) @ 15°C, 101.3 kPa
COEFFICIENT OF WATER/OIL @ 25°C, Bunsen Coefficient = 0.052 DISTRIBUTION:

FIRE OR EXPLOSION HAZARD

CONDITIONS OF FLAMMABILITY: Nonflammable gas
MEANS OF EXTINCTION: Nonflammable gas
FLASHPOINT AND METHOD OF DETERMINATION: Nonflammable gas
UPPER EXPLOSION LIMIT (% BY VOL): Nonflammable gas
LOWER EXPLOSION LIMIT (% BY VOL): Nonflammable gas
AUTO-IGNITION TEMPERATURE: Nonflammable gas
FLAMMABILITY CLASSIFICATION: Nonflammable gas
HAZARDOUS COMBUSTION PRODUCTS: Nonflammable gas
EXPLOSION DATA: Nonflammable gas
SENSITIVITY TO STATIC DISCHARGE: None

REACTIVITY DATA

CHEMICAL STABILITY: Stable
INCOMPATIBLE MATERIALS: Alkali or alkaline earth metals, powdered aluminum, zinc, beryllium
CONDITIONS OF REACTIVITY: Relatively inert gas
HAZARDOUS DECOMPOSITION @ 538°C hydrochloric hydrofluoric PRODUCTS: acids and phosgene

TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY:

SKIN CONTACT: Contact with the rapidly evaporating liquid may cause frostbite

or cryogenic "burns".

SKIN ABSORPTION: None

EYE: None

INHALATION: Inhalation of high concentrations of vapor may cause dizziness, disorientation, incoordination, narcosis, nausea or vomiting leading to unconsciousness. Contact with the rapidly evaporating liquid may cause frostbite or cryogenic "burns".

INGESTION: None

ACUTE OVER EXPOSURE EFFECTS: Relatively non-toxic, it may act as a narcotic at high concentrations.

Frostbite effects are a change in color of the skin to gray or white possibly followed by blistering.

CHRONIC OVER EXPOSURE EFFECTS: No irreversible effects are known once an adequate supply of oxygen is returned (oxygen deficiency corrected).

EXPOSURE LIMITS: TWA = 1,000 molar ppm (ACGIH 1995-1996)

IRRITANCY OF PRODUCT: None

SENSITIZATION TO MATERIAL: None

CARCINOGENICITY, REPRODUCTIVE EFFECTS: None known

TERATOGENICITY, MUTAGENICITY: None known

TOXICOLOGICALLY SYNERGISTIC PRODUCTS: None

PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Plastic or rubber gloves. Safety goggles or safety glasses. Safety shoes.

SPECIFIC ENGINEERING CONTROLS: Halocarbon 12 is noncorrosive and may be used with any common structural material. Silver and copper bearing alloys can act as catalysts for the decomposition of halocarbon 12 at high temperatures. Alloys containing more than 2% magnesium should not be used if water is present.

LEAK AND SPILL PROCEDURES: EVACUATE ALL PERSONNEL FROM AFFECTED AREA.

Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is on container or container valve, contact the closest MEGS location.

WASTE DISPOSAL: Do not attempt to dispose of waste 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 MEGS for proper disposal. For emergency disposal, contact the closest MEGS location.

HANDLING PROCEDURES AND EQUIPMENT: USE ONLY IN WELL-VENTILATED AREAS.

Valve protection caps must remain in place unless container is secured with valve outlet piped to the point of use. 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 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 cylinder. Do not tamper with (valve) safety device. Close valve after each use and when empty.

STORAGE REQUIREMENTS: Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 52°C. Cylinders must 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.

TDG CLASSIFICATION: 2.2

WHMIS CLASSIFICATION: A

SPECIAL SHIPPING INFORMATION: Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

FIRST AID MEASURES

SPECIFIC FIRST AID PROCEDURES: PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO HALOCARBON 12. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

INHALATION: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Unconscious persons should be moved to an uncontaminated area, given assisted resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

EYE CONTACT: Not applicable

SKIN CONTACT: Dermal Contact or Frostbite: Remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if the cryogenic "burn" has resulted in blistering of the dermal surface or deep tissue freezing.

PREPARATION INFORMATION

PREPARED BY: Safety Department

DATE PREPARED: 09/09/1999

LAST REVISION DATE: 05/21/2002

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