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MSDS: Halocarbon 21

PRODUCT INFORMATION

PRODUCT: Halocarbon 21
TRADE NAME: Halocarbon 21 or Freon® 21
CHEMICAL NAME: Dichlorofluoromethane
SYNONYMS: R 21 or Refrigerant 21
FORMULA: CHCl₂F
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: 102.92
PRODUCT USE: Various
PRODUCT IDENTIFICATION NUMBER: 1029

HAZARDOUS INGREDIENTS

CHEMICAL ID	CONCENTRATION	CAS #	LD(50)	LC(50)
Halocarbon 21	100%	75-43-4		Inhl-gpg 10 pph/1 h

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): 1.38

VAPOR PRESSURE: 127 kPa
VAPOR DENSITY (air = 1): 3.54
EVAPORATION RATE: Unknown
BOILING POINT: 8.9°C
FREEZING POINT: -134.95°C
pH: Unknown
GAS DENSITY: 5.70 kg/m³ @ 15°C, 101.3 kPa
COEFFICIENT OF WATER/OIL @ 25°C, Bunsen Coefficient = 2.066
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, magnesium, beryllium
CONDITIONS OF REACTIVITY: Open flames and high (>550°C) temperatures
HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, hydrogen fluoride and possibly phosgene

TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY:

SKIN CONTACT: Skin contact when it is a liquid may cause frostbite or irritation.

SKIN ABSORPTION: None

EYE: Eye contact may cause irritation or cold injury

INHALATION: Inhalation of high concentrations of vapor may cause light-headedness, giddiness, disorientation, nausea, vomiting, narcosis, cardiac dysrhythmias, hypotension and death.

INGESTION: None reported

ACUTE OVER EXPOSURE EFFECTS: Relatively non-toxic; however, it may act as a narcotic at high concentrations. Cardiac dysrhythmias, potentially lethal, may result from the sensitization of the myocardium to endogenous epinephrine.

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

CHRONIC OVER EXPOSURE EFFECTS: None reported

EXPOSURE LIMITS: TWA = 10 molar ppm (ACGIH 1995-1996)

IRRITANCY OF PRODUCT: None

SENSITIZATION TO MATERIAL: None

CARCINOGENICITY, REPRODUCTIVE EFFECTS: None reported

TERATOGENICITY, MUTAGENICITY: None reported

TOXICOLOGICALLY SYNERGISTIC PRODUCTS: None

PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Plastic or rubber gloves. Safety goggles or safety glasses. Safety shoes, safety shower, eyewash "fountain".

SPECIFIC ENGINEERING CONTROLS: Most common structural materials are compatible with Halocarbon 21. At high temperatures certain metals may act as catalysts in the decomposition of this compound.

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 Liquid Air 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. 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 from 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 21. 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: PERSONS WITH POTENTIAL EXPOSURE TO

HALOCARBON 21 SHOULD NOT WEAR CONTACT LENSES.

Flush contaminated eye(s) with copious quantities of water. Part eyelids with fingers to assure complete flushing. Continue for minimum of 15 minutes.

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: 09/01/1999

LAST REVISION DATE: 05/21/2002

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