DU PONT

MATERIAL SAFETY DATA SHEET

Duplicate

IDENTIFICATION

Name:
Freon® 502

Chemical Family:
Halogenated Hydrocarbon

Synonyms:
Freon® 115/Freon® 22 Azeotrope,
R-502, Refrigerant 502

Formula:
$CHClF_2/CClF_2CF_3$ (Azeotrope)

CAS Name:
Ethane, chloropentafluoro
Methane, chlorodifluoro

CAS Registry No.
76-15-3
75-45-6

Manufacturer/Distributor:
E. I. du Pont de Nemours & Co. (Inc.)

Medical Emergency Phone:
(800) 441-3637

Address:
Freon® Products Division
Wilmington, DE 19898

Transportation Emergency Phone:
CHEMTREC (800) 424-9300

PHYSICAL DATA

Boiling Point(°F): -49.8

Percent Volatile by Volume: 100

Density: 1.242 g/cc @ 77°F

Vapor Pressure: 155 psig @ 77°F

Vapor Density (Air = 1): 4.2

Solubility in H_2O: Not determined

Form: Liquefied gas

Appearance: Clear

Color: Colorless

Odor: Slight ethereal odor

HAZARDOUS COMPONENTS

Material(s):	Approximate % :
Chloropentafluoroethane	51.2
Chlorodifluoromethane	48.8

HAZARDOUS REACTIVITY

Stability: Material is stable. However, avoid open flames and high temperatures.

Incompatibility: Alkali or alkaline earth metals - powdered Al, Zn, Be, etc.

Decomposition: Freon® 502 can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids - possible carbonyl halides.

Polymerization: Will not occur

FIRE AND EXPLOSION DATA

Flash Point:
None

Method:
TOC

Autoignition Temperature:
Not determined

Flammable Limits in Air, % by Vol.
Lower: Nonflammable
Upper: Nonflammable

Autodecomposition Temperature:
Not determined

Fire and Explosion:
Cylinders are equipped with temperature and pressure relief devices but still may rupture under fire conditions. Decomposition may occur.

Extinguishing Media:
Nonflammable

Special Fire Fighting Instructions:
Self-contained breathing apparatus may be required if cylinders rupture or release under fire conditions.

HEALTH HAZARD INFORMATION

Principal Health Hazards:

Inhalation: Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Breathing high concentrations of vapor may cause light-headedness, giddiness, shortness of breath, and may lead to narcosis, cardiac irregularities, unconsciousness or death. FC-115 LC50 Rat >800,000 ppm/4 hr., FC-22 LC 50 Rat 300,000 ppm/2 hr.

Note: In screening studies with experimental animals, exposure to FC-22 at concentrations of approximately 50,000 ppm (v/v) and above, and exposure to FC-115 at concentrations of 150,000 ppm (v/v) and above, followed by a large intravenous epinephrine challenge, has resulted in serious cardiac irregularities.

Skin: Contact with liquid can cause frostbite.

Eye: Contact with liquid can cause frostbite.

Exposure Limits:

PEL (OSHA): Not Established

TLV® (ACGIH): 1000 ppm for both components

Safety Precautions:
Avoid breathing vapors and liquid contact with skin. Use in well ventilated area.

First Aid:

Inhalation: Remove to fresh air, call a physician. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Do not give epinephrine or similar drugs.

Note to Physicians: Because of a possible increased risk of eliciting cardiac dysrythmias, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life threatening emergencies.

Eye: Flush with water. Call a physician if frostbite occurs.

Skin: Flush with water. Treat for frostbite if necessary.

Medical Conditions Possibly Aggravated by Exposure:

Cardiovascular Disease: See Principal Health Hazards: Inhalation Section.

Other Health Hazards:

The components of this mixture are not listed as a carcinogen by IARC, NTP or OSHA. In chronic inhalation studies, FC-22 produced a small incidence of tumors in male rats, but not female rats or male or female mice, at a concentration of 50,000 ppm (v/v). In the same studies, no effects were seen in any animals at a concentration of 10,000 ppm (v/v). Moreover, based on animal studies and human experiences this fluorocarbon poses no hazard to man relative to systemic toxicity, carcinogenicity, mutagenicity, or teratogenicity when occupational exposures are below its recommended exposure limits.

PROTECTION INFORMATION

Generally Applicable Control Measures:
Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low places.

Personal Protective Equipment:
Lined Neoprene gloves should be used if skin contact is possible. Chemical splash goggles should be available. Under normal manufacturing conditions no respiratory protection is required when using this product. Self-contained breathing apparatus is required if a spill or release occurs.

DISPOSAL INFORMATION

Spill, Leak or Release:
Ventilate area--especially low places where heavy vapors might collect. Remove open flames.

Waste Disposal:
Comply with federal, state, and local regulations or remove to permitted waste disposal facility. Reclaim by distillation.

SHIPPING INFORMATION

Domestic - Other Than Air (DOT)

Proper Shipping Name	Refrigerant gas, n.o.s.
Hazard Class	Nonflammable gas
UN No.	1078
DOT Label(s)	Nonflammable gas
DOT Placard	Nonflammable gas

International Water or Air (IMO/ICAO)

Proper Shipping Name	Chlorodifluoromethane and chloropentafluoromethane mixture
Hazard Class	Nonflammable gas
UN No.	1973
IMO/ICAO Label	Nonflammable gas

Other Information

Shipping Containers	25# Cyls to ton tanks
Storage Conditions	Clean, dry area. Do not heat above 125°F.

Date Revised: 10/85
Person responsible: T. D. Armstrong, C&P Dept., Freon® Products Lab., Chestnut Run, Bldg. 711, Wilmington, DE 19898 (302) 999-3847 or (302) 999-4338.

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