



MATERIAL SAFETY DATA SHEET

R-502 Refrigerant
May 2011

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

MATERIAL IDENTIFICATION

Formula

CCl₂F₂/CH₃CHF₂ (AZEOTROPE)

COMPANY IDENTIFICATION

Manufacturer/Distributor

Hudson Technologies Company
One Blue Hill Plaza, PO Box 1541
Pearl River, NY 10965

Phone Numbers

Product information: 1-800-953-2244
Transport Emergency: CHEMTREC 1-800-424-9300
Medical Emergency: 1-800-501-4376

COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS

Material	CAS Number	%
R-500	56275-41-3	100
*	75-71-8	
*METHANE, DICHLORODIFLUORO- (R- 12)		73.8
ETHANE, 1,1-DIFLUORO- (FC-152a)	75-37-6	26.2

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Skin contact may include frostbite from exposure to the liquid.

Inhalation may include nonspecific discomfort, such as nausea, headache, or weakness; or temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness.

Higher exposures (> 20%) may lead to temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation. Data to evaluate the skin permeation hazard of this compound are insufficient. There are no reports of human sensitization. Individuals with preexisting diseases of the central nervous system, or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

CARCINOGENICITY INFORMATION

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

INHALATION

If high concentrations are inhaled, immediately remove to fresh air. Keep persons calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

In case of skin contact, flush with water for 15 minutes. Treat for frostbite if necessary by gently warming



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affected areas. Get medical attention if irritation is present.

EYE CONTACT

In case of eye contact, immediately flush eyes with plenty of water for 15 minutes. Call a physician.

IF SWALLOWED

Ingestion is not considered a potential route of exposure.

Notes to Physicians

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution in situations of emergency life support.

FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point	Will not burn
Flammable limits in Air, % by Volume	
LEL	Not applicable
UEL	Not applicable
Autoignition	Not determined

Autodecomposition Temperature:

Dichlorodifluoromethane	<760 deg C (<1400 deg F)
Difluoroethane	<445 deg C (<836 deg F)

Fire and Explosion Hazards:

Use water spray or fog to cool containers. Cylinders are equipped with temperature and pressure relief devices but may still rupture under fire conditions. Decomposition may occur.

EXTINGUISHING MEDIA

As appropriate for combustibles in area.

FIRE FIGHTING INSTRUCTIONS

Self-contained breathing apparatus (SCBA) is required if cylinders rupture or release under fire conditions.

ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

ACCIDENTAL RELEASE MEASURES

Ventilate area-especially low places where heavy vapors might collect. Wear self-contained breathing apparatus (SCBA) for large spills. Remove open flames.

HANDLING AND STORAGE

HANDLING (PERSONNEL)

Avoid breathing vapors. Avoid liquid contact with skin or eyes. Use with sufficient ventilation to keep employee exposure below recommended limits.

STORAGE

Clean, dry area. Do not heat above 52 deg C (125 deg F).



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EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

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

Impervious gloves and chemical splash goggles should be used if contact with liquid is possible. Under normal manufacturing conditions no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a spill occurs.

EXPOSURE GUIDELINES

APPLICABLE EXPOSURE LIMITS

METHANE, DICHLORODIFLUORO- ("FREON" 12)

PEL (OSHA) 1,000 ppm, 4,950 mg/m³, 8 Hr. TWA
TLV (ACGIH) 1,000 ppm, 4,950 mg/m³, 8 Hr. TWA, A4

ETHANE, 1,1-DIFLUORO- (FC-152a)

PEL (OSHA) None Established
TLV (ACGIH) None Established
WEEL (AIHA) 1000 ppm, 8 Hr. TWA

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA

Boiling Point -33 C (-27 F)
Vapor Pressure 232 psia at 54 deg C (130 deg F)
Vapor Density 3.7 (Air = 1)
% Volatiles 100 WT%
Evaporation Rate (CCl₄ = 1)
Less than 1
Odor Slight ethereal
Form Liquified gas
Color Colorless
Density 1.16 g/cc at 25 deg C (77 deg F) - Liquid
Appearance Clear

STABILITY AND REACTIVITY

CHEMICAL STABILITY

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

INCOMPATIBILITY WITH OTHER MATERIALS

Incompatible with active metals, alkali or alkaline earth metals--powdered Al, Zn, Be, etc.

POLYMERIZATION

Polymerization will not occur.

OTHER HAZARDS

DECOMPOSITION

Decomposition products are hazardous. "FREON" 500 Refrigerant can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides.



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TOXICOLOGICAL INFORMATION

ANIMAL DATA

The compound is untested for skin irritancy, contains a mild eye irritant, and is untested for animal sensitization.

No information found for R- 500, but acute inhalation toxicity information on R- 152a include anaesthetic effects, and cardiac sensitization. Freon 12 inhalation include effects by exclusion of oxygen, and nonspecific effects.

Animal testing indicates that R- 12, and R- 152a do not have carcinogenic, mutagenic, or embryotoxic effects. Animal testing indicates that R- 12 does not have reproductive effects. Otherwise no animal test reports are available to define carcinogenic, mutagenic, embryotoxic, or reproductive hazards.

ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

AQUATIC TOXICITY: R- 12: 48 hour EC50 - Daphnia magna: 95 mg/L.

DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Comply with Federal, State, and local regulations. Reclaim by distillation or remove to a permitted waste disposal facility.

TRANSPORTATION INFORMATION

SHIPPING INFORMATION

Proper Shipping Name : DICHLORODIFLUOROMETHANE AND DIFLUOROETHANE AZEOTROPIC MIXTURE
Hazard Class 2.2
UN No. 2602
DOT/IMO Label NONFLAMMABLE GAS
Shipping Containers Cylinders
Ton Tanks
Reportable Quantity R- 12: 5000 lbs/2270 kg

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status	Reported/Included.
TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312	
Acute	Yes
Chronic	No
Fire	No
Reactivity	No
Pressure	Yes

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating	
Health	1
Flammability	0
Reactivity	1

Personal Protection rating to be supplied by user depending on use conditions.



MATERIAL SAFETY DATA SHEET

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS:
MSDS Coordinator
Responsibility for MSDS: Stephen Mandracchia
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800-953-2244

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS