



MATERIAL SAFETY DATA SHEET

R-14 Refrigerant

November 2018 Revised

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

MATERIAL IDENTIFICATION

Formula : CF4

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	%
TETRAFLUOROMETHANE (R-14 REFRIGERANT)	75-73-0	100

HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Inhalation of high concentrations may cause fatal heart irregularities. Inhalation may cause nausea, headache, weakness, dizziness, confusion, incoordination and loss of consciousness. Vapors of "FC"-14 are heavier than air posing a hazard of asphyxia if they are trapped in enclosed or low places. At flame temperatures, this can decompose to hydrogen fluoride which can be lethal at low concentrations. Frostbite may occur on skin or eye contact.

Skin or eye contact with liquid or escaping vapor may include frostbite. Significant skin permeation, and systemic toxicity, after contact appears unlikely. There are no reports of human sensitization.

Inhalation of excessive concentrations may include temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation. Individuals with preexisting diseases of the central nervous 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 inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.



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EYE CONTACT

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

INGESTION

Ingestion is not considered a potential route of exposure.

NOTES TO PHYSICIANS

THIS MATERIAL MAY MAKE THE HEART MORE SUSCEPTIBLE TO ARRHYTHMIAS.

Catecholamines such as adrenaline, and other compounds having similar effects, should be reserved for emergencies and then used only with special caution.

FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point	Will not burn
Flammable limits in Air, % by Volume	
LEL	Not applicable
UEL	Not applicable
Autoignition	>1100 C (>2012 F)

Fire and Explosion Hazards

Cylinders are equipped with pressure and temperature relief devices but may still rupture under fire conditions.

EXTINGUISHING MEDIA

As appropriate for combustibles in the area.

FIRE FIGHTING INSTRUCTIONS

Use water spray or fog to cool container. 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. Remove open flames. For large releases, wear self-contained breathing apparatus (SCBA).

HANDLING AND STORAGE

HANDLING (PERSONNEL)

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

STORAGE

Store in clean, dry area. Do not heat above 52 C (125 F).

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

Lined neoprene gloves should be used when transferring gas. Under normal manufacturing conditions no



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respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

EXPOSURE GUIDELINES

EXPOSURE LIMITS

R-14 Refrigerant

PEL (OSHA)

None Established

TLV (ACGIH)

None Established

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA

Boiling Point	-127.9 C (-198.2 F)
Vapor Pressure	529 psig @ -45.6 C (-50.1 F) Critical
Temperature	(-50 degF) Critical Temp
Vapor Density	3.03 (Air=1.0)
% Volatiles	100 WT%
Solubility in Water	0.0015 WT% @ 25 C (77 F)
Odor	None
Form	Compressed gas
Color	Clear, colorless
Liquid Density	1.317 g/cm ³ @ -80 C (-112 F)

STABILITY AND REACTIVITY

CHEMICAL STABILITY

Stable.

CONDITIONS TO AVOID

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

INCOMPATIBILITY WITH OTHER MATERIALS

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

DECOMPOSITION

R-14 Refrigerant decomposes at high temperatures (open flames, glowing metal surface, etc.) forming hydrofluoric acid.

POLYMERIZATION

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

ANIMAL DATA

Inhalation 15 minute ALC: 895,000 ppm in rats

The compound is untested for skin irritancy, but may freeze the skin on contact, and is untested for eye irritancy and for animal sensitization.

Single exposure by inhalation to concentrations of 80% caused hyperactivity, followed by decreased activity, tissue congestion, and closed eyes. Dogs exposed to concentrations of 20%-60% did exhibit pre-ventricular contractions when challenged with an injection of epinephrine; however, no cardiac arrhythmias were observed. Repeated exposures to concentrations > 22% produced altered blood counts and lung inflammation in guinea pigs and rats.

No animal test reports are available to define carcinogenic, mutagenic, developmental, or reproductive hazards.



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DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

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

TRANSPORTATION INFORMATION

SHIPPING INFORMATION

DOT/IMO/IATA
Proper Shipping Name TETRAFLUOROMETHANE, COMPRESSED
Hazard Class 2.2
UN No. 1982
Shipping Label Nonflammable Gas
Shipping Containers Cylinders

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

LISTS:

Extremely Hazardous Substance -	No
CERCLA Hazardous Substance -	No
Toxic Chemicals -	No

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating	
Health	1
Flammability	0
Reactivity	1

California Prop. 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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

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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Pearl River, NY 10965
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