

MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: Whirlpool Refrigerant-12 Substitute (R-414A)

Product Number (s): 09857

Manufactured By: CRC Industries, Inc. (215) 674-4300
885 Louis Drive, Warminster, PA 18974
24-Hour Emergency Information: CHEMTREC (800) 424-9300

Section 2: Composition/Information on Ingredients

Component	CAS NUMBER	ACGIH TLV	OSHA PEL	OTHER LIMITS
Isobutane	75-28-5	NE	NE	1000 ppm
1-Chloro-1, 1-difluoroethane	75-68-3	NE	1000 ppm	NE
Chlorodifluoromethane	75-45-6	1000 ppm	NE	NE
1-chloro-1,2,2,2 tetrafluoroethane	2837-89-0	NE	NE	NE

Section 3: Hazards Identification

Emergency Overview

Appearance & Odor: Colorless liquefied gas with faint ethereal odor..

Caution: Contents under pressure.

Potential Health Effects:

- Inhalation: May produce anaesthetic effects and feeling of euphoria. Prolonged overexposure can cause rapid breathing, headache, dizziness, narcosis, unconsciousness, and death from asphyxiation, depending on concentration and time of exposure.
- Eyes: Can cause severe irritation, redness, tearing, and blurred vision.
- Skin: Contact with evaporating liquid can cause frostbite.
- Ingestion: Liquid ingestion may cause frostbite. Aspiration hazard.

Carcinogenicity: OSHA: No IARC: No NTP: No
Chronic Overexposure: Rapid heartbeats, depression of cardiac function.
Medical Conditions Aggravated by Exposure: Risk to your health depends on the level and duration of exposure.

Section 4: First Aid Measures

Inhalation: Remove to fresh air. Give artificial respiration if necessary. Call a physician.

Eyes: Flush with large amounts of water for 15 minutes. Consult with physician immediately if frostbite occurs.

Skin: Get medical attention if there is evidence of tissue damage. Flush area with plenty of water. Treat as frostbite.

Ingestion: Call a physician. Do not induce vomiting.

Section 5: Fire-Fighting Measures

Flashpoint: None Method: TCC LEL: ND UEL: ND

Extinguishing Media: Dry chemical extinguisher, water
Hazardous Combustion Products: Thermal – Hydrogen fluoride, carbon monoxide and carbon dioxide
Fire-fighting Instructions: Cylinders may vent or rupture in fire conditions, leading to decomposition.

Use self-contained breathing apparatus. Use water spray to cool Cylinders to prevent bursting or venting under fire conditions. Product may be flammable if mixed with large quantities of air at greater than atmospheric pressure.

NFPA: Health: 1 Flammability: 0 Reactivity: 1
HMIS: Health: 1 Flammability: 0 Reactivity: 1 PPE: B

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Section 6: Accidental Release Measures

Spill/Leak Procedures: Usually not a problem with aerosols. Area should be ventilated. Absorbent should be used to pick up excess material. All used and unused product should be disposed of in accordance with federal, state and local regulations.

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Section 7: Handling and Storage

Handling Procedures: Store in a cool, dry area. Aerosol cans must be maintained below 120°F to prevent cans from exploding.

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Section 8: Exposure Controls/Personal Protection

Engineering Controls: Adequate to prevent accumulation of vapors. Use mechanical means if necessary to maintain levels below the exposure limits. If working in a confined space, follow applicable OSHA regulations.

Respiratory: Use NIOSH/MSHA compliant respirators or self-contained breathing apparatus above exposure limits. Follow OSHA regulations 29 CFR 1910.134.

Protective Clothing/Equipment: Wear chemically protective gloves and safety glasses. Use a splash apron and boots if splashing occurs.

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Section 9: Physical & Chemical Properties

Physical State: Liquid Appearance & Odor: Colorless liquefied gas with

Specific Gravity:	ND	Boiling Point:	ethereal odor.	
Freezing Point:	ND	Vapor Pressure:	-26°F	
Evaporation Rate:	ND	Vapor Density (air = 1)	95 PSIG @ 70 °F	
pH:	Neutral	Solubility:	1.4	
			Slight	
Volatile Organic Compounds:%: ND		g/L: ND	lbs./gal:	ND

Section 10: Stability and Reactivity

Stability: Stable Hazardous Polymerization: No
 Chemical Incompatibilities: Strong oxidants, including oxygen. Alkali metals, and alkali earth metals may cause exothermic reaction. Aluminum in refrigeration systems contains an oxide coating, so it does not react.
 Conditions to Avoid: High heat, spark, and open flames.
 Hazardous Decomposition Products: Hydrofluoric and hydrochloric acids, chlorine, fluorine, possible phosgene and carbonyl acids, CO2 and CO.

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. See Section 3 of this MSDS for acute symptoms of overexposure and carcinogenicity information.

Section 12: Ecological Information

Ecotoxicity: No data available.
 Environmental Fate: No data available for biodegradation.

Section 13: Disposal Considerations

Disposal: This material if discarded may be hazardous waste under U.S. EPA RCRA regulations. All disposal activities must comply with federal, state and local regulations. Contact your local or state environmental agency for specific rules. Do not dump into sewers, on the ground or into any body of water.

Section 14: Transportation Information

Shipping Name: Compressed Gas, N.O.S.(Chlorodifluoromethane, Chlorodifluoroethane)
 Hazard Class: 2.2 UN Number: 1956 Packing Group: NA
 Label: 2.2 Placard: Nonflammable gas
 Special Provisions: NA

Section 15: Regulatory Information

TSCA: All components are either listed under TSCA or are exempt.
SARA Title III: Section 311/312: Acute, Pressure
Section 313 : Chlorodifluoromethane, 1-Chloro-1, 1-difluoroethane,
1-chloro-1,2,2,2 tetrafluoroethane*
CERCLA/Superfund (RQ): NA
Extremely Hazardous Substances: No
California Prop 65: No

* See section 2 for percentage

Section 16: Additional Information

Prepared By: Michelle Rudnick Date: August 24, 2006
Technical Information: (800) 521-3168 CRC #: 128

This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label.

CAS:	Chemical Abstract Service	NA:	Not Applicable
ppm:	Parts per Million	ND:	Not Determined
TCC:	Tag Closed Cup	NE:	Not Established
LEL:	Lower Explosive Limit	g/L:	grams per Liter
UEL:	Upper Explosive Limit	lbs./gal:	pounds per gallon
PPE:	Personal Protection Equipment	RQ:	Reportable Quantity
COC:	Cleveland Closed Cup		