



Material Safety Data Sheet

Section 1: Product & Company Identification

Product Name: PF™ Precision Cleaner (Bulk)

Product Number (s): 02192, 02193

Manufactured By:

CRC Industries, Inc.
885 Louis Drive
Warminster, PA 18974
www.crcindustries.com

General Information	(215) 674-4300
Technical Assistance	(800) 521-3168
Customer Service	(800) 272-4620
24-Hr Emergency (CHEMTREC)	(800) 424-9300

Section 2: Hazards Identification

Emergency Overview

Appearance & Odor: Colorless volatile liquid with ethereal and faint sweetish odor

WARNING

Vapor harmful. Eye irritant.

As defined by OSHA's Hazard Communication Standard, this product is hazardous.

Potential Health Effects:

EYE: Irritant. Liquid contact will cause irritation, tearing, or pain and may cause conjunctivitis.

SKIN: Immediate effects may include irritation, itching, redness and swelling. Prolonged and/or repeated contact with material can cause defatting of the skin.

INHALATION: Overexposure to vapor may cause dizziness, loss of concentration and irritation. With high exposure levels, effects can include central nervous system (CNS) depression and cardiac arrhythmia. Product vapors displace air and can cause suffocation especially in a confined space.

INGESTION: The major hazard is aspiration of the liquid into the lungs during swallowing or vomiting. This may result in chemical pneumonia. Symptoms include coughing, gasping, shortness of breath and bluish discoloration of the skin. Pulmonary edema, confusion, coma and seizures may occur in more serious cases.

CHRONIC EFFECTS: None identified.

TARGET ORGANS: None identified.

Medical Conditions Aggravated by Exposure:

Pre-existing respiratory or cardiac conditions could be worsened by exposure to vapors.

See Section 11 for toxicology and carcinogenicity information on product ingredients.

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Decafluoropentane (HFC-43-10mee)	138495-42-8	70 - 80
1,1-Dichloro-1-fluoroethane (HCFC-141B)	1717-00-6	20 - 30

Section 4: First Aid Measures

Eye Contact: Immediately flush with plenty of water for 15 minutes, lifting eyelids occasionally to facilitate irrigation. Get medical attention.

Skin Contact: Remove contaminated clothing and wash affected area with soap and water. Call a physician if irritation persists. Wash contaminated clothing prior to re-use.

Inhalation: Remove person to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Do NOT give epinephrine (adrenaline). Call a physician.

Ingestion: Do NOT induce vomiting unless instructed to do so by a physician. Immediately give 2 glasses of water. Do NOT give stimulants. Get medical attention immediately.

Note to Physicians: Because of possible disturbances of cardiac rhythm, catecholamine drugs such as epinephrine should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

Section 5: Fire-Fighting Measures

Flammable Properties: As defined by OSHA, this product is a nonflammable liquid.

Flash Point:	None	Upper Explosive Limit:	17.7
Autoignition Temperature:	ND	Lower Explosive Limit:	7.6

Suitable Extinguishing Media: Choose an extinguishing agent appropriate for the surrounding fire.

Products of Combustion: Product will decompose at temperatures above 482 F. Decomposition products include hydrochloric acid, hydrofluoric acid and carbonyl halides, such as phosgene.

Protection of Fire-Fighters: Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against suffocation and possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

Section 6: Accidental Release Measures

Personal Precautions: Use personal protection recommended in Section 8. Avoid inhaling vapors.

Environmental Precautions: Take precautions to prevent contamination of ground and surface waters. Do not flush into sewers or storm drains.

Methods for Containment & Clean-up: Dike area to contain spill. Eliminate all ignition sources. Ventilate the area with maximum ventilation. If in confined space or limited air circulation area, clean-up workers should wear appropriate respiratory protection and other personal protective equipment. Recover or absorb spilled material using an absorbent designed for chemical spills. Place used absorbents into proper waste containers.

Section 7: Handling and Storage

Handling Procedures: Minimize vapor accumulation by providing air circulation. Avoid breathing vapors or mist. Wear eye protection. Wash thoroughly after handling.

Storage Procedures: Store in a cool dry area out of direct sunlight. Aerosol cans must be maintained below 120 F to prevent cans from rupturing. If stored below 14 F, mix prior to use.

Aerosol Storage Level: NA

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

COMPONENT	OSHA		ACGIH		OTHER		UNIT
	TWA	STEL	TWA	STEL	TWA	SOURCE	
Decafluoropentane	NE	NE	NE	NE	200	mfg*	ppm
1,1-Dichloro-1-fluoroethane	NE	NE	NE	NE	500	AIHA	ppm
N.E. – Not Established		(c) – ceiling	(s) – skin	(v) – vacated			

* manufacturer's exposure limit

Engineering Controls: Area should have ventilation to provide fresh air. Use local exhaust to prevent accumulation of vapors. Use mechanical means if necessary to maintain vapor levels below the exposure guidelines. If working in a confined space, follow applicable OSHA regulations

Respiratory Protection: None required for normal work where adequate ventilation is provided. Use a NIOSH-approved cartridge respirator with organic vapor cartridge if vapors exceed exposure limits. Use a self-contained breathing apparatus in confined spaces and for emergencies.

Eye/face Protection: For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

Skin Protection: Use protective gloves such as MYLAR® coated Durafab, PVA or neoprene. Also, use full protective clothing if there is prolonged or repeated contact of liquid with skin.

Section 9: Physical and Chemical Properties

Physical State: liquid

Color: clear, colorless

Odor: ethereal and sweetish odor

Specific Gravity: 1.47

Initial Boiling Point: 89.6 F

Freezing Point: ND

Vapor Pressure: ND

Vapor Density: > 1 (air = 1)

Evaporation Rate: > 1 (ether = 1)

Solubility: slight in water

pH: NA

Volatile Organic Compounds:	Federal:	<u>wt %:</u> 0	<u>g/L:</u> 0	<u>lbs./gal:</u> 0
	CARB:	<u>wt %:</u> 75	<u>g/L:</u> 1102.5	<u>lbs./gal:</u> 9.18

Section 10: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Avoid sources of ignition. Ignition / flash may result if concentration is in the flammable range (See Section 5). At all concentration ranges, exposure of this product to high energy sources may yield toxic and/or corrosive decomposition products.

Incompatible Materials: Strong acids and alkalis. Alkali or alkaline earth metals such as powdered or freshly abraded aluminum, sodium, potassium, calcium, magnesium, zinc, molten aluminum, barium and lithium shavings. Strong oxidizing agents.

Hazardous Decomposition Products: Hydrochloric and hydrofluoric acids; and carbonyl halides, such as phosgene. Decafluoropentane is incompatible with strong bases and can react to form salts of hydrofluoric acid.

Possibility of Hazardous Reactions: No

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. The following information is available for components of this product.

ACUTE EFFECTS

<u>Component</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
1,1-dichloro-1-fluoroethane	LC50	62,000 ppm/4H	Inhalation	albino rat
Decafluoropentane	LC50	11,100 ppm/4H	Inhalation	rat
1,1-dichloro-1-fluoroethane	LD50	> 5 g/kg	Oral	rat
1,1-dichloro-1-fluoroethane	LD50	> 2 g/kg	Dermal	rabbit

CHRONIC EFFECTS**Carcinogenicity:**

	<u>Component</u>	<u>Result</u>
OSHA:	None listed	
IARC:	None listed	
NTP:	None listed	

Mutagenicity: 1,1-dichloro-1-fluoroethane Ames Assay – Not Active

Other: 1,1-dichloro-1-fluoroethane cardiac sensitization threshold: 10,000 ppm
Decafluoropentane mild eye irritant and slight skin irritant in animal testing

Section 12: Ecological Information

Ecological studies have not been conducted for this product. The following information is available for

components of this product.

Ecotoxicity: Decafluoropentane – daphnia magna: 11.7 mg/L
fathead minnow: 27.2 mg/L
Persistence / Degradability: minimal biodegradability
Bioaccumulation / Accumulation: No data
Mobility in Environment: No data

Section 13: Disposal Considerations

Disposal: This product is not a hazardous waste if it is unused. Spent liquid, when used as a solvent, is a hazardous waste with a waste code of F001 (See 40 CFR Part 261.20 – 261.33)
Empty containers may be recycled.

All disposal activities must comply with federal, state and local regulations. Local regulations may be more stringent than state or national requirements.

Section 14: Transport Information

Proper shipping description:

US DOT (ground): Not Regulated

Special Provisions: None

Section 15: Regulatory Information

U.S. Federal

Toxic Substances Control Act (TSCA):

All ingredients are either listed on the TSCA inventory or are exempt. Decafluoropentane is controlled by TSCA Section 5, Significant New Use Rule (SNUR: 40 CFR 721.5645).

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Reportable Quantities (RQ's) exist for the following ingredients: None

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Superfund Amendments Reauthorization Act (SARA) Title III:

Section 302 Extremely Hazardous Substances (EHS): None

Section 311/312 Hazard Categories:	Fire Hazard	No
	Reactive Hazard	No
	Release of Pressure	No
	Acute Health Hazard	Yes
	Chronic Health Hazard	Yes

Section 313 Toxic Chemicals: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

1,1-dichloro-1-difluoroethane (25%)

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): None

State RegulationsCalifornia Safe Drinking Water and Toxic Enforcement Act (Prop 65):

This product may contain the following chemicals known to the state of California to cause cancer, birth defects or other reproductive harm: NONE

State Right to Know:

New Jersey: 1717-00-6
 Pennsylvania: 1717-00-6
 Massachusetts: 1717-00-6
 Rhode Island : 1717-00-6

Additional Regulatory Information: 1,1-Dichloro-1-fluoroethane (HCFC-141B) is a Class II Ozone Depleting Substance subject to use and sales restrictions. See 40 CFR Part 82.70 for a description of the acceptable uses for this product.

Section 16: Other Information

NFPA: Health: 2 Flammability: 1 Reactivity: 0
 HMIS: Health: 2 Flammability: 1 Reactivity: 0 PPE: B

Prepared By: Michelle Rudnick
 CRC #: 429H
 Revision Date: 8/21/2006

Changes since last revision: MSDS reformatted in accordance with ANSI Z400.1-2004

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. 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
PMCC:	Pensky-Martens Closed Cup	g/L:	grams per Liter
PPE:	Personal Protection Equipment	lbs./gal:	pounds per gallon
TWA:	Time Weighted Average	STEL:	Short Term Exposure Limit
OSHA:	Occupational Safety and Health Administration	AIHA:	American Industrial Hygiene Assoc.
NIOSH:	National Institute of Occupational Safety & Health	CARB:	California Air Resources Board
ACGIH:	American Conference of Governmental Industrial Hygienists		