



MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: Precision Plus® Cleaner (aerosol)

Product Number (s): 02210, 02211

Product Use: Electronic Cleaner

Manufacturer / Supplier Contact Information:

In United States:

CRC Industries, Inc.

885 Louis Drive

Warminster, PA 18974

www.crcindustries.com

1-215-674-4300 (General)

(800) 521-3168 (Technical)

(800) 272-4620 (Customer Service)

In Canada:

CRC Canada Co.

2-1246 Lorimar Drive

Mississauga, Ontario L5S 1R2

www.crc-canada.ca

1-905-670-2291

In Mexico:

CRC Industries Mexico

Av. Benito Juárez 4055 G

Colonia Orquídea

San Luís Potosí, SLP CP 78394

www.crc-mexico.com

52-444-824-1666

24-Hr Emergency – CHEMTREC: (800) 424-9300 or (703) 527-3887

Section 2: Hazards Identification

Emergency Overview

WARNING: Vapor Harmful. Contents Under Pressure.
Appearance & Odor: Clear, colorless liquid with slight ethereal odor

Potential Health Effects:

ACUTE EFFECTS:

EYE: May cause mild eye irritation. Not an eye irritant.

SKIN: May cause mild skin irritation. Not a skin irritant.

INHALATION: Inhalation of high concentrations of vapor is harmful and may cause hepatitis, heart irregularities, unconsciousness, or death. Intentional misuse can be fatal. Vapor reduces oxygen available for breathing and is heavier than air.

INGESTION: Low oral toxicity. Swallowing of small amounts is not expected to cause health effects. May be hazardous if aspirated into lungs.

CHRONIC EFFECTS: Unknown

TARGET ORGANS: HCFC-225ca/cb produced liver effects in some animal studies.

Medical Conditions Aggravated by Exposure: Unknown

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

Section 3: Composition/Information on Ingredients

COMPONENT	CAS NUMBER	% by Wt.
Dichloropentafluoropropane (HCFC-225ca/cb)	422-56-0 / 507-55-1	60 - 70
COzol® 101	proprietary	0 – 3
COzol® 102	proprietary	0 - 3
1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2	30 - 40

Section 4: First Aid Measures

Eye Contact: Immediately flush with plenty of water for 15 minutes. Call a physician if irritation persists.

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. Call a physician.

Ingestion: No specific intervention is indicated due to low oral toxicity. Consult a physician if necessary. Do not induce vomiting because the hazard of aspirating the material into the lungs is considered greater than swallowing it.

Note to Physicians: Treat symptomatically.

Section 5: Fire-Fighting Measures

Flammable Properties: This product is nonflammable in accordance with aerosol flammability definitions. (See 16 CFR 1500.3(c)(6))

Flash Point:	None (TCC)	Upper Explosive Limit:	None
Autoignition Temperature:	ND	Lower Explosive Limit:	None

Fire and Explosion Data:

Suitable Extinguishing Media: As appropriate for the combustibles in the area

Products of Combustion: At temperatures above 570°F / 299°C, this product can decompose to form hydrogen fluoride (HF), but HF will only accumulate with continuous exposure to excessive heat in a sealed vessel.

Explosion Hazards: Aerosol containers, when exposed to heat from fire, may build pressure and explode.

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. Containers may rupture under fire conditions.

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. Ventilate the area with fresh air. If in confined space or limited air circulation area, clean-up workers should wear appropriate respiratory protection. 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: Provide adequate ventilation for storage, handling and use, especially for enclosed or low spaces. Do not allow product to contact open flame or electrical heating elements because dangerous decomposition products may form. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. For product use instructions, please see the product label.

Storage Procedures: Store in a cool, dry, well-ventilated area out of direct sunlight. Aerosol cans must be maintained below 120°F / 49°C to prevent cans from rupturing.

Aerosol Storage Level: I

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines:

COMPONENT	OSHA		ACGIH		OTHER		UNIT
	TWA	STEL	TWA	STEL	TWA	SOURCE	
HCFC-225ca/cb	NE	NE	NE	NE	100	*mfg	ppm
COzol® 101	NE	NE	NE	NE	200	*mfg	ppm
COzol® 102	NE	NE	NE	NE	750	AIHA	ppm
1,1,1,2-Tetrafluoroethane (HFC-134a)	NE	NE	NE	NE	1000	AIHA	ppm
N.E. – Not Established (c) – ceiling (s) – skin (v) – vacated							

* manufacturer's exposure limit

Controls and Protection:

Engineering Controls: Area should have ventilation to provide fresh air. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at the source, preventing dispersion into the general work area. 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. If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with organic vapor cartridge. Air monitoring is needed to determine actual employee exposure levels. 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 nitrile 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: slight ethereal
 Odor Threshold: ND
 Specific Gravity: 1.565
 Initial Boiling Point: 129°F / 54°C
 Freezing Point: -203°F / -131°C
 Vapor Pressure: 0.038 MPa @ 77°F / 25°C
 Vapor Density: 7.0 (air = 1)
 Evaporation Rate: 0.9 (ether = 1)
 Solubility: 0.033g/100g water @ 77°F / 25°C
 Coefficient of water/oil distribution: ND
 pH: NA
 Volatile Organic Compounds: Federal: wt %: 0 g/L: 0 lbs./gal: 0
 CARB: wt %: 65.2 g/L: 1020.4 lbs./gal: 8.5

Section 10: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Avoid open flames and high temperature.

Incompatible Materials: Alkali or alkaline earth metals such as powdered aluminum, zinc, beryllium, etc.

Hazardous Decomposition Products: This compound can be decomposed by high temperature (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, possibly carbonyl halides.

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 Toxicity:

Component	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
HCFC-225ca/cb	> 5 g/kg	> 2 g/kg	36,800 ppm/4H
COzol® 101	> 5000 mg/kg	> 5000 mg/kg	114 mg/L/4H
COzol® 102	> 5 g/kg	No data	> 100,000 ppm/4H
1,1,1,2-Tetrafluoroethane (HFC-134a)	No data	No data	1500 mg/m ³ /4H

Chronic Toxicity:

Component	OSHA Carcinogen	IARC Carcinogen	NTP Carcinogen	Irritant	Sensitizer
HCFC-225ca/cb	No	No	No	No	No
COzol® 101	No	No	No	No	No
COzol® 102	No	No	No	No	Unknown
1,1,1,2-Tetrafluoroethane (HFC-134a)	No	No	No	No	Unknown

Reproductive Toxicity: No information available

Teratogenicity: No information available

Mutagenicity: HCFC-225ca & cb These compounds do not produce genetic damage in bacterial cell cultures (Ames Assay) or CHL.

Synergistic Effects: No information available

Section 12: Ecological Information

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

Ecotoxicity: No information available
Persistence / Degradability: No information available
Bioaccumulation / Accumulation: No information available
Mobility in Environment: No information available

Section 13: Disposal Considerations

Waste Classification: The dispensed liquid product is not a hazardous waste. (See 40 CFR Part 261.20 – 261.33)
Empty aerosol containers may be recycled.

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

Section 14: Transport Information

US DOT (ground): UN1950, Aerosols, non-flammable, 2.2, Limited Quantity

ICAO/IATA (air): UN1950, Aerosols, non-flammable, 2.2, Limited Quantity

IMO/IMDG (water): UN1950, Aerosols, 2.2, Limited Quantity

Special Provisions: None

Section 15: Regulatory Information

U.S. Federal Regulations:

Toxic Substances Control Act (TSCA):

All ingredients are either listed on the TSCA inventory or are exempt.

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	Yes
	Acute Health Hazard	Yes
	Chronic Health Hazard	No

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:
HCFC-225ca/cb (< 65%)

Clean Air Act:

Section 112 Hazardous Air Pollutants (HAPs): None

Occupational Safety and Health Administration:

This product is regulated by the Hazard Communications Standard.

U.S. State Regulations:**California 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

Consumer Products VOC Regulations: This product complies with Consumer Products VOC regulations as an Electronic Cleaner.

State Right to Know:

New Jersey: 422-56-0, 507-55-1
Pennsylvania: None
Massachusetts: None
Rhode Island : None

Canadian Regulations:**Controlled Products Regulations:**

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulation and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Hazard Class: A, D2B

Canadian DSL Inventory: All ingredients are either listed on the DSL Inventory or are exempt.

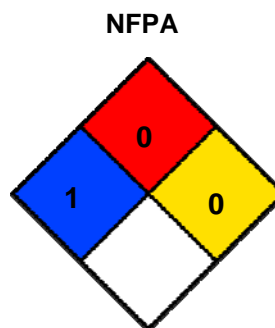
European Union Regulations:

RoHS Compliance: This product is compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. This product does not contain any of the restricted substances as listed in Article 4(1) of the RoHS Directive.

Additional Regulatory Information: HCFC-225ca/cb 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

HMIS® (II)	
Health:	1
Flammability:	0
Reactivity:	0
PPE:	B



Ratings range from 0 (no hazard) to 4 (severe hazard)



MATERIAL SAFETY DATA SHEET

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Changes since last revision: MSDS reformatted to meet the requirements of the Canadian Controlled Products Regulations.

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. For further clarification of any information contained on this MSDS consult your supervisor, a health & safety professional, or CRC Industries.

ACGIH: American Conference of Governmental Industrial Hygienists	NA: Not Applicable
CAS: Chemical Abstract Service	ND: Not Determined
CFR: Code of Federal Regulations	NIOSH: National Institute of Occupational Safety & Health
DOT: Department of Transportation	NFPA: National Fire Protection Association
DSL: Domestic Substance List	NTP: National Toxicology Program
g/L: grams per Liter	OSHA: Occupational Safety and Health Administration
HMIS: Hazardous Materials Identification System	PMCC: Pensky-Martens Closed Cup
IARC: International Agency for Research on Cancer	PPE: Personal Protection Equipment
IATA: International Air Transport Association	ppm: Parts per Million
ICAO: International Civil Aviation Organization	RoHS: Restriction of Hazardous Substances
IMDG: International Maritime Dangerous Goods	STEL: Short Term Exposure Limit
IMO: International Maritime Organization	TCC: Tag Closed Cup
lbs./gal: pounds per gallon	TWA: Time Weighted Average
LC: Lethal Concentration	WHMIS: Workplace Hazardous Materials Information System
LD: Lethal Dose	