

Material Safety Data Sheet
 May be used to comply with
 OSHA's Hazard Communication Standard,
 29 CFR 1910.1200. Standard must be
 consulted for specific requirements.

U.S. Department of Labor
 Occupational Safety and Health Administration
 (Non-Mandatory Form)
 Form Approved
 OMB No. 1218-0072



IDENTITY (As Used on Label and List)
 Cramolin B-5 Spray

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name Caig Laboratories, Inc.	Emergency Telephone Number Cramolin 619-743-7143 Dupont FREON & Dymel: 1-800-441-3637
Address (Number, Street, City, State, and ZIP Code) 1175-0 Industrial Ave. Escondido, CA 92025	Telephone Number for Information 619-743-7143
	Date Prepared 7/11/89
	Signature of Preparer (optional)

Section II - Hazardous Ingredients/Identity information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Trichlorotrifluoroethane FREON TF	1,000PPM	1,000PPM	None	75.0%
Difluoroethane Dymel 152	Not Est.	Not Est.	None	20.0%
Cramolin Blue Fluid B100L	Not Est.	Not Est.		5.0%

Section III - Physical/Chemical Characteristics

Boiling Point OF FREON TF	117.6°F	Specific Gravity (H₂O = 1) @77°F Approx.	1.57g/cc
Vapor Pressure (mm Hg.) OF FREON TF	334	Melting Point	N/A
Vapor Density (AIR = 1) OF FREON TF	6.5	Evaporation Rate (Butyl Acetate = 1) CC1 ₄ = 1	0.1

Solubility in Water
 OF FREON TF and Cramolin oil mixture - less than 0.2% by weight.

Appearance and Odor Light blue color of mixture. Blue color of oil residue after solvent has evaporated. Slight ethereal odor.

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) non-flammable Cramolin oil residue 170°C (A. Pensky)	Flammable Limits Not Established	LEL	UEL
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Extinguishing Media
 If Cramolin oil residue ignited - use foam CO₂, or Halon and breathing equipment.

Special Fire Fighting Procedures
 Use self contained breathing apparatus if open flame or glowing metal is present due to possible hazardous decomposition into Hydrochloric and Hydrofluoric acids and possible carbonyl halides.

Unusual Fire and Explosion Hazards
 SEE ABOVE

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	AVOID OPEN FLAMES AND HIGH TEMPERATURE

Incompatibility (Materials to Avoid) Alkali or alkaline earth metals-powdered Al, Zn, Be, etc.

Hazardous Decomposition or Byproducts This compound can be decomposed by high temperature (Open flame and glowing metal) forming hydrochloric and hydrofluoric acids and possible carbonyl halides.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	CONDITION TO AVOID-SEE ABOVE

Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
Health Hazards (Acute and Chronic)	FOR INFORMATION IN THIS SECTION REFER TO ATTACHED SHEET MARKED "HEALTH HAZARDS AND FIRST AID"		

Carcinogenicity:	NTP?	NO	IAFD Monographs?	NO	OSHA Regulated?	NO
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Signs and Symptoms of Exposure SEE ATTACHED SHEET

Medical Conditions Generally Aggravated by Exposure SEE ATTACHED SHEET

Emergency and First Aid Procedures SEE ATTACHED SHEET

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled
 Ventilate area till odor is gone. Use self contained breathing apparatus for necessary prolonged exposure. After FREONS have been removed by ventilation, clean up oily residue with standard soap or detergent solution.

Waste Disposal Method
 Comply with Federal State and local regulations.
 EPA Hazardous waste #'s F001 and F002 may apply.

Precautions to Be Taken in Handling and Storing
 Do not expose aerosol cans to direct sunlight or high temperatures (120°F) to prevent possible bursting. all aerosol cautions apply. Use in ventilated ares.

Other Precautions
 As with any chemical preparation, use only as directed and wash hands after use.

Section VIII — Control Measures

Respiratory Protection (Specify Type)
 Not necessary unless used in an unventilated area or in high concentrations.

Ventilation KEEP WINDOWS OPEN	Local Exhaust When used repeatedly in quantity	Special N/A
	Mechanical (General) To prevent buildup in low areas	Other N/A
Protective Gloves	Not necessary	Eye Protection Suggested when using aerosols

Other Protective Clothing or Equipment
 Not necessary with adequate ventilation.

Work/Hygenic Practices
 Avoid breathing vapors and contact with skin or eyes. Use adequate ventilation.

*****HEALTH HAZARDS AND FIRST AID*****

HEALTH HAZARD INFORMATION

Principal Health Hazards:

Inhalation - Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Breathing high concentration of vapor may cause light-headedness, giddiness, shortness of breath, and may lead to narcosis, cardiac irregularities, unconsciousness or death. LC50 Rat 300,000 ppm/2 hr.

Note: In screening tests with experimental animals, exposure to Dymel® or Freon TF at approximately 50,000 ppm (v/v) and above, followed by a large intravenous epinephrine challenge, has induced serious cardiac irregularities.

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

Skin: Flush with water. Get medical attention if irritation is present.

Oral: No specific intervention is indicated as the compound is not likely to be hazardous by ingestion. However, consult a physician if necessary. Do not induce vomiting as the hazard of aspirating the material into the lungs is a greater hazard than allowing it to progress through the intestinal tract.

Medical Conditions Possibly Aggravated by Exposure:

Cardiovascular Disease: See Principal Hazards: Inhalation Section.

First Aid:

Inhalation: Remove to fresh air, call a physician. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Do not give epinephrine or similar drugs.

Note to Physicians: Because of a possible increased risk of eliciting cardiac dysrhythmias, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life threatening emergencies.