Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,

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

Section I

Manufacturer's Name
Caig Laboratories, Inc.

Address (Number, Street, City, State, and ZIP Code)
1173-0 Industrial Ave.
Escondido, CA 92025

Emergency Telephone Number 619-743-7143
Dupont FREON & Dymel: 1-800-441-3637

Telephone Number for Information
619-743-7143

Date Prepared
7/11/89

Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

<table>
<thead>
<tr>
<th>Hazardous Component(s) (Specific Chemical Identity; Common Name(s))</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits Recommended</th>
<th>% (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichlorotrifluoroethane FREON TF</td>
<td>1,000PPM</td>
<td>1,000PPM</td>
<td>None</td>
<td>75.0%</td>
</tr>
<tr>
<td>Difluoroethane Dymel 152</td>
<td>Not Est.</td>
<td>Not Est.</td>
<td>None</td>
<td>20.0%</td>
</tr>
<tr>
<td>Cramolin Red Fluid R100L</td>
<td>Not Est.</td>
<td>Not Est.</td>
<td>Not Est.</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

Section III — Physical/Chemical Characteristics

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point OF FREON TF</td>
<td>117.6°F</td>
</tr>
<tr>
<td>Specific Gravity (H2O = 1) @77°F Approx.</td>
<td>1.57g/cc</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg) OF FREON TF @ 77°F</td>
<td>334</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1) CC14 =1</td>
<td>0.1</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>FREON TF &amp; OIL MIXTURE less than 0.2% by weight</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Light pink color of mixture. Red color of oil residue after solvent has evaporated. Slight ethereal odor.</td>
</tr>
</tbody>
</table>

Section IV — Fire and Explosion Hazard Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point (Method Used) Mixture non-flammable</td>
<td>Not Established</td>
</tr>
<tr>
<td>Cramolin oil residue 170°C (A. Pensky)</td>
<td></td>
</tr>
<tr>
<td>Flammable Limits</td>
<td></td>
</tr>
<tr>
<td>Extinguishing Media</td>
<td>If Cramolin oil residue ignites—use foam CO2, or Halon and breathing equipment.</td>
</tr>
<tr>
<td>Special Fire Fighting Procedures</td>
<td>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.</td>
</tr>
<tr>
<td>Unusual Fire and Explosion Hazards</td>
<td></td>
</tr>
</tbody>
</table>

SEE ABOVE
Section V — Reactivity Data

Stability | Unstable | Stable
--- | --- | ---
Conditions to Avoid | X | AVOID OPEN FLAMES AND HIGH TEMPERATURES

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 temperatures (open flames and glowing metal) forming Hydrochloric acid and Hydrofluoric acids and possible carbonyl halides.

Hazardous Polymerization
May Occur | Conditions to Avoid
--- | ---
Will Not Occur | XX conditions to avoid—SEE ABOVE.

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Skin? Ingestion?
--- | --- | ---
FOR INFORMATION IN THIS SECTION

Health Hazards (Acute and Chronic)
PLEASE REFER TO ATTACHED SHEET
MARKED

"HEALTH HAZARDS AND FIRST AID"

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated?
--- | --- | ---
NO | NO | NO

Signs and Symptoms of Exposure
SEE ATTACHED

Medical Conditions Generally Aggravated by Exposure
SEE ATTACHED

Emergency and First Aid Procedures
SEE ATTACHED

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 any standard soap or detergent solution.

Waste Disposal Method
Comply with Federal, State and local laws and regulations.

EPA Hazardous waste #’s F001 & F002 may apply.

Precautions to Be Taken in Handling and Storing
Do not expose any aerosol can to sunlight or high temperature (above 120°F) to prevent possible bursting. All aerosol cautions apply—use in ventilated area.

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 LOCAL EXHAUST
WHEN USED REPEATEDLY IN QUANTITY
MECHANICAL (GENERAL)
OPEN TO PREVENT BUILDUP IN LOW AREAS

Protective Gloves
NOT NECESSARY
Suggested when using any aerosol

Other Protective Clothing or Equipment
Not necessary with adequate ventilation

Work/Hygienic 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 dysrhythias, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life threatening emergencies.