Diamond Liqui-Tool
Chemicals/Rawn Chemicals
Material Safety Data Sheet

IDENTITY
Liqui-Tool® 1502-12, Freon® 22 Super Freeze

Section I

Manufacturer's Name                    Emergency Telephone Number
RAWN COMPANY, INC.                      Daytime (715) 635-8711 After Hours (715) 635-8102
Address (Number, Street, City, State, and Zip Code)
P.O. Box 9
Hwy. 53 South
Spooner, WI 54801                          Telephone Number for Information
(715) 635-8711
Date Prepared 5-21-90 Revised
Signature of Prepared  

Section II — Hazardous Ingredients/Identity Information

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits Recommended (STEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorodifluoromethane</td>
<td>75-45-6</td>
<td>1000 ppm</td>
<td>3500 mg/m³</td>
<td>not established</td>
</tr>
</tbody>
</table>

Section III — Physical/Chemical Characteristics

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point °F</td>
<td>-41.4</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (H₂O = 1)</td>
<td>(at 77° F.)</td>
<td>1.194</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg.) (at 77° F.)</td>
<td>7046</td>
<td></td>
</tr>
<tr>
<td>Melting Point</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Vapor Density (AIR = 1) (at 77° F.)</td>
<td>3.03</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>0.30</td>
<td>(at 77° F.)</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Clear, liquified gas, slight ethereal odor.</td>
<td></td>
</tr>
</tbody>
</table>

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used) None (TOC)

<table>
<thead>
<tr>
<th>Flammable Limits</th>
<th>LEL</th>
<th>UEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Extinguishing Media As appropriate for combustibles in area.

Special Fire Fighting Procedures Self-contained breathing apparatus may be required if containers rupture and release contents under fire conditions.

Unusual Fire and Explosion Hazards Exposure to high temperatures may cause container failure. Heat and flame contact may cause decomposition and generation of hazardous byproducts.
### Section V — Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>Unstable</th>
<th>Conditions to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stable</td>
<td>X Avoid contact with high temperatures, open flame.</td>
</tr>
</tbody>
</table>

**Incompatibility (Materials to Avoid)**
Avoid alkali and alkaline earth metals, powdered Al, Zn, Be, and so forth.

**Hazardous Decomposition or By products**
Hydrochloric and hydrofluoric acids, possibly carbonyl halides.

| Hazardous PolymORIZATION | May Occur | Conditions to Avoid | Will Not Occur | X n/a |

### Section VI — Health Hazard Data

**See Attachment**
This product does not contain any ingredients classified as carcinogenic by NTP, IARC, or OSHA.

### Section VII — Precautions for Safe Handling and Use

**Steps to Be Taken in Case Material is Released or Spilled**
Remove open flames, ventilate area, especially low places. Product evaporates rapidly.

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

**Precautions to Be Taken in Handling and Storing**
Store away from high temperatures, open flame, incompatibles, and out of direct sunlight in a clean, dry area at temperatures below 125°F.

**Other Precautions**
Avoid prolonged or repeated breathing of vapors, skin and eye contact. Use with adequate ventilation.

### Section VIII — Control Measures

**Respiratory Protection (Specify Type)**
None generally required with normal use. Wear a NIOSH approved self-contained respirator for organic vapors if TLV's are exceeded, an air-supplied respirator in large releases or confined areas.

**Ventilation**
- Local Exhaust: when large amounts are released, Special n/a, in low places, Other n/a
- Mechanical (General) n/a

**Protective Gloves**
Lined butyl gloves, Eye Protection: Chemical safety goggles

**Other Protective Clothing or Equipment**
Wear as needed to prevent direct or prolonged skin contact during use.

**Work/Hygienic Practices**
General hygienic practices include washing hands after use, before eating, drinking, or smoking, with soap and water.

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**THESE DATA ARE OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EITHER EXPRESS OR IMPLIED, IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS.**
EYE
Irritant - frostbite is possible.

SKIN
Frostbite is possible.

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

INGESTION
Not considered a likely route for exposure.

SUBCHRONIC AND CHRONIC EFFECTS OF OVEREXPOSURE
Toxic effects described in animals from exposure by inhalation, ingestion or skin contact include central nervous system effects, anesthetic effects, cardiovascular effects, lung effects, liver effects, kidney effects, and spleen effects. In a 2 year inhalation study, a significantly increased incidence of salivary gland tumors was observed in male rats exposed to a 5% concentration of Freon® 22. Tests for mutagenic activity in bacterial or mammalian cell structures have been inconclusive, with positive results in some studies, and negative results in others. Tests in some animals indicate that the compound may have embryotoxic activity, but only at maternally toxic concentrations. Tests in animals demonstrate no reproductive toxicity.

Human health effects of overexposure by inhalation, ingestion, skin or eye contact may initially include central nervous system effects. Higher exposures may lead to temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation; or fatality from gross overexposure. Freon® 22 vaporized quickly at ambient temperatures; therefore, data available to evaluate the skin permeation hazard of this compound are insufficient. There are no reports of human sensitization.

CARCINOGENICITY
This product is not listed as a carcinogen by NTP, IARC, OSHA or ACGIH.

FIRST AID AND EMERGENCY PROCEDURES

INHALATION
Remove victim to fresh air. If not breathing, administer artificial respiration, preferably mouth-to-mouth. If breathing is difficult, call a physician.

SKIN CONTACT
Flush affected area with water. Treat for frostbite if necessary.

EYE CONTACT
Immediately flush eyes with plenty of water. Call a physician.

INGESTION
Not considered a likely route for exposure.

NOTE TO PHYSICIAN
Because of possible disturbances of cardiac rhythm, catecholamine drugs such as epinephrine should be used with special caution in situations of emergency life support.

Note: Inhalation 0.25 hour LC50 ~ 350,000 ppm for rats.