



THE TRIANGLE TOOL GROUP, INC.
Subsidiary of The Triangle Corporation
Orangeburg, South Carolina 29115

1802

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

HAZARD RATING:
4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT
* = CHRONIC HEALTH HAZARD - SEE SECTION V

Fire: 0
Health: 1
Reactivity: 1
Special: 1

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

Section I

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

Section II — Hazardous Ingredients/Identity Information

Hazardous Components	CAS #	(TWA) OSHA PEL	(TWA) ACGIH TLV	Other Limits Recommended (STEL)
Chlorodifluoromethane	75-45-6	1000 ppm	3500 mg/m ³	not established

Section III — Physical/Chemical Characteristics

Boiling Point °F	-41.4	Specific Gravity (H ₂ O = 1) (at 77° F.)	1.194
Vapor Pressure (mm Hg.) (at 77° F.)	7046	Melting Point	n/a
Vapor Density (AIR = 1) (at 77° F.)	3.03	Evaporation Rate Butyl Acetate CCl ₄ = 1 Hexane	> 1
Solubility in Water	0.30 (at 77° F.)		
Appearance and Odor	Clear, liquified gas, slight ethereal odor.		

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used) None (TOC)	Flammable Limits	LEL n/a	UEL n/a
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

Stability	Unstable		Conditions to Avoid
	Stable	X	Avoid contact with high temperatures, open flame.
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 Polymerization	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
	Mechanical (General)	in low places	Other	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.

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.

EFFECTS OF OVEREXPOSURE

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.