

**** MATERIAL SAFETY DATA SHEET ****

HistoFreeze 2000
87004

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: HistoFreeze 2000
Catalog Numbers:
12-645-33
Synonyms:
Freez-It 2000
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
811-97-2	1,1,1,2-tetrafluoroethane	100.0%	212-377-0

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: Clear colorless liquified gas.
Warning! Vapor reduces oxygen available for breathing. Causes digestive and respiratory tract irritation. Eye contact may result in permanent eye damage. May cause frostbite.
Target Organs: None.

Potential Health Effects

Eye:
Not available.
Contact with liquid may cause severe tissue damage because of frostbite.

Skin:
Not available.
Contact with liquid may cause skin damage due to frostbite.

Ingestion:
Aspiration hazard. May cause irritation of the digestive tract.
Inhalation:
Vapor reduces oxygen available for breathing. May cause dyspnea (difficult breathing from shortness of breath).
Chronic:
No information found.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.

Skin:
Get medical aid if irritation develops or persists. Treat for frostbite.

Ingestion:
Do NOT induce vomiting. Get medical aid.

Inhalation:
Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:
Substance causes cardiac sensitization to endogenous catecholamines which may lead to cardiac arrhythmias. Do not use adrenergic agents such as epinephrine or pseudoepinephrine.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Extinguishing Media:
For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.
Autoignition Temperature: Not applicable.
Flash Point: Not applicable.
NFPA Rating: Not published.

Explosion Limits, Lower: Not available.
Upper: Not available.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Absorb the liquid and scrub the area with detergent and water.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with skin and eyes. Do not get on skin or in eyes.

Storage:
Keep away from heat and flame. Store in a cool, dry place. Do not store in direct sunlight.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Use adequate ventilation to keep airborne concentrations low.

Chemical Name	Exposure Limits		
	ACGIH	NIOSH	OSHA - Final PELs
1,1,1,2-tetrafluoroethane	none listed	none listed	none listed

OSHA Vacated PELs:
1,1,1,2-tetrafluoroethane:
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

Skin:
Wear appropriate gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Gas
Appearance: Clear colorless liquified gas
Odor: Slight ethereal odor.
pH: Not available
Vapor Pressure: 96 mm Hg @ 77F
Vapor Density: 3.18 @ 77F
Evaporation Rate: 1 (butyl acetate=1)
Viscosity: Not available.
Boiling Point: 15.7736 F
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: 0.15% @77F in water.
Specific Gravity/Density: 1.21 (water=1)
Molecular Formula: CH2FCF3
Molecular Weight: 102.0076

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials, excess heat, temperature above 40C.
Incompatibilities with Other Materials:
Alkali and alkaline earth metals, powdered aluminum, zinc, magnesium and beryllium.
Hazardous Decomposition Products:
Hydrofluoric acid, carbonyl fluoride.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 811-97-2 unlisted.
LD50/LC50:
Not available.

Carcinogenicity:
1,1,1,2-tetrafluoroethane -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants: Not listed.
RCRA D-Series Chronic Toxicity Reference Levels: Not listed.
RCRA F-Series: Not listed.
RCRA P-Series: Not listed.
RCRA U-Series: Not listed.
Not listed as a material banned from land disposal according to RCRA.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
No information available
IMO
No information available.
IATA
No information available.
RID/ADR
No information available.
Canadian TDG
No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

A. Federal

TSCA
CAS# 811-97-2 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 811-97-2: Effective Date: October 15, 1990; Sunset Date: November
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)
None of the chemicals in this material have an RQ.
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
Section 313
No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous
Substances under the CWA.
None of the chemicals in this product are listed as Priority
Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants
under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous
by OSHA.

B. State

Not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.

C. International

Canada

CAS# 811-97-2 is listed on Canada's DSL/NDL List.
CAS# 811-97-2 is not listed on Canada's Ingredient Disclosure List.
European Labeling in Accordance with EC Directives
Hazard Symbols: Not available.
Risk Phrases:
Safety Phrases:
S 24/25 Avoid contact with skin and eyes.

Exposure Limits:

OEL-RUSSIA:STEL 2 mg/m3

**** SECTION 16 - ADDITIONAL INFORMATION ****

Additional Information:

No additional information available.
MSDS Creation Date: 5/17/1995 Revision #3 Date: 5/08/1996

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