Safety Data Sheet
FRZ-1 SHURFreeze™ Cryogen Spray

1. IDENTIFICATION

Triangle Biomedical Sciences, Inc.
4354 Ferguson Drive
Cincinnati, OH 45245
1 (800) 733-5252 x6473

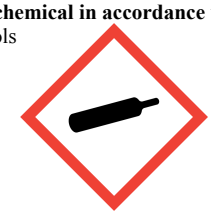
Product Name:	SHURFreeze™ Cryogen Spray
Product Code:	FRZ-1
Product Use:	Duster/Freeze Spray
24-hour emergency phone:	1-800-424-9300 [CHEMTREC]

2. HAZARD IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

GHS Hazard Symbols



GHS Classification	Gases under pressure - Liquified Gas
Signal Word	Warning
Hazard Statements	Contains gas under pressure; may explode if heated.
Precautionary Statements	
Storage	Protect from sunlight. Store in a well-ventilated place.

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS #	Percent
Halogenated hydrocarbon	811-97-2	80 - 100

HMIS® III* HAZARDOUS WARNINGS:

Health:	1	Flammability:	1	Physical:	0	Personal Protective Equipment:	See Section 8

* See www.paint.org/hmis or call the ACA at 1 (202) 462-6272 for more information on this current rating system.

4. FIRST AID MEASURES

Eyes:	Immediately flush eyes gently with plenty of water for at least 15 minutes while holding eyelids apart. If symptoms persist or there is visual difficulty, seek medical attention.
Skin Contact:	In case of contact, immediately wash contaminated area with plenty of water for at least 15 minutes. Seek medical attention if symptoms persist. Wash clothing before reuse.
Ingestion:	Ingestion is an unlikely route of exposure.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention.

NOTES TO PHYSICIAN:
Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used only in situations of emergency life support.

5. FIRE FIGHTING MEASURES

Fire and/or Explosion Hazards:	Gas is not flammable at ambient temperatures and atmospheric pressure. However, this material may become combustible when mixed with oxygen or air under pressure or air above atmospheric pressure.Containers may rupture or explode under fire conditions.
Fire Fighting Instructions:	Use CO_2, foam or dry chemical. Water is generally not effective and may spread fire; however, water spray may be used from a safe distance to cool closed containers and protect surrounding area.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Ventilate contaminated area. Remove all sources of ignition. Wear appropriate personal protective equipment (PPE). Stop or reduce discharge if it can be done safely.

7. HANDLING AND STORAGE

Handling: Use with adequate ventilation. Do not use near ignition sources. Do not breathe vapor. May cause frostbite.
Storage: Store in a cool, dry, well ventilated area away from all sources of ignition. Do not store at temperatures above 122 degrees F. Empty container may contain residues which are hazardous.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Ventilation should be adequate to prevent exposures above the limits indicated below in this section of the SDS (from known, suspected or apparent adverse effects).
Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid or airborne material. Have an eye wash station available.
Skin Protection: The use of chemically resistant gloves is recommended if there is any possibility of prolonged or repeated liquid contact with skin.
Respiratory Protection: None required for well ventilated situations. A supplied air respirator should be used if ventilation is not sufficient to maintain exposure limits. Use NIOSH approved respirator where there is likelihood of inhalation of the product mist, spray or aerosol.

COMPONENT	CAS #	ACGIH TLV	OSHA PEL	OTHER
Halogenated hydrocarbon	811-97-2	Not established	Not established	1000ppm (mfr. recommend)

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Aerosol	Lower Flammability Limit (%):	Not applicable
Appearance:	None	Upper Flammability Limit (%):	Not applicable
Odor:	Slight ethereal.	Vapor Pressure (PSIG @ 70°F):	80
Odor Threshold:	Very faint	Vapor Density [air = 1]:	>1
pH:	Not applicable	Relative Density (H2O=1):	1.22
Melting/Freezing Point (°F):	-150	Solubility in Water:	Negligible; 0-1%
Boiling Point (°F):	-15.2	Partial Coefficient: n-octanol/water:	1.06
Flash Point (°F PMCC):	Not applicable	Autoignition Temperature (°F):	1382
Evaporation Rate:	0.5-2 (n-Butyl acetate = 1)	Decomposition Temperature (°F):	482
Flammability (solid, gas):	No data available	Viscosity, dynamic (cSt):	No data available
Percent VOCs (%):	< 0.0001		

10. STABILITY AND REACTION

Chemical Stability: Stable. Do not mix with oxygen or air above atmospheric pressure. Any source of high temperature [>250 C], may form hydrofluoric acid and possibly carbonyl fluoride decomposition products.
Conditions to Avoid: Ignition sources such as open flames, sparks, static discharges or glowing metal surfaces. Avoid contact with: Alkali. Alkaline earth metals. Freshly abraded aluminum surfaces. Powdered metals. Magnesium. Zinc. Chemically active metals: calcium, powdered aluminum, zinc, sodium, potassium, magnesium, etc.
Decomposition Products: This material can be decomposed by extremely high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and carbonyl fluoride.

11. TOXICOLOGICAL INFORMATION

Inhalation Toxicity: Inhalation LC50 (4h) Rat > 500000 ppm
Reproductive & Developmental Toxicity: No data available.
IARC Carcinogen Designation: No data available

Ingredient	CAS #	Toxicological Data
Halogenated hydrocarbon	811-97-2	No data available No data available INHALATION LC50 Mouse 1700 GM/M3 INHALATION LC50 Rat 1500 GM/M3

12. ECOLOGICAL INFORMATION

Ecological Toxicity: Presents little or no hazard to the aquatic environment.
Mobility: No data available
Degradability: Not considered biodegradable; 100% volatile.

Ingredient	CAS #	Toxicological Data
No data available		

13. DISPOSAL CONSIDERATIONS

Disposal : Dispose according to Federal, State and local regulations.

14. TRANSPORTATION INFORMATION

Agency	UN Number	Proper Shipping name	Hazard Class	Packing Group
DOT	UN3159	1,1,1,2-Tetrafluoroethane	2.2	Not applicable
IATA	ID8000	Consumer Commodity	9	Not applicable
IMDG	UN3159	1,1,1,2-Tetrafluoroethane	2.2	Not applicable

15. REGULATORY INFORMATION

Warning: This product contains the following chemicals that are subject to reporting requirements for the following regulatory bodies listed below:

COMPONENT	CAS #	% BY WEIGHT	Regulatory Body
No components listed in this section.			SARA Section 313

Toxic Substances Control Act
All components of this product are listed on the TSCA inventory.

California Prop 65
This product contains no California Proposition 65 ingredients that cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

Other Information : SDS Prepared by L. Dean Swartz, SDS Coordinator

Version Date: 07/03/18