1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-242N-AS
Anti-Static Quik-Freeze

Product Use: Anti-Static Freeze Spray

MANUFACTURER/DISTRIBUTOR:

Miller-Stephenson Chemical
55 Backus Ave.
Danbury, Conn. 06810 USA
(203) 743-4447

Emergency Phone Number:
(800) 424-9300

2. HAZARDS IDENTIFICATION

Physical Hazard: Gases under pressure – Liquefied Gas

Label elements:

Single Word: Warning
Hazard Statements
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statements
Protect from sunlight.
Store in a well-ventilated place.
Pressurized container. Do not pierce or burn, even after use.

Hazards not otherwise classified
May cause cardiac arrhythmia
May cause frostbite.

3. INGREDIENTS

Material (s)	CAS No.	Approximate %
1,1,1,2 Tetrafluoroethane	811-97-2	99
Methanol	67-56-1	1

4. FIRST AID MEASURES

Inhalation: If high concentrations are inhaled, immediately remove patient to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Get medical attention immediately.

Eye: Remove contact lenses from eyes. Immediately flush with large amounts of water for at least 15 minutes, lifting eyelids until no evidence of the chemical remains. Get medical attention.

Skin: Flush promptly with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention if necessary. Treat for frostbite if necessary by gently warming affected area.

Oral: Is not considered a potential route of exposure. DO NOT INDUCE VOMITING without medical advice. Immediately rinse mouth and drink plenty of water. Call a physician immediately.

Notes to Physician: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

Extinguishing media: The product is not flammable. Use the media appropriate for surrounding materials.

Fire and Explosion: Aerosol cans may rupture under fire conditions.

Hazardous decomposition products: In case of fire, toxic gases (CO, CO2) along with Hydrogen halides, Hydrogen fluoride and Carbonyl halides may form.

Specific Hazards: Avoid contact with flame and hot surfaces because burst and toxic decomposition products may form. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Protective Equipment for Fire-Fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Aerosols can explode when heated. Warn personnel of this hazard and unprotected personnel should not return until safe to do so. Ventilate area**.** Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Avoid inhalation of vapors. Use an approved respirator if needed to keep exposure levels below the accepted level.

Environmental Precautions: Prevent further leakage or spillage, if safe to do so. This product evaporates readily.

Spill Clean Up Methods: Extinguish all ignition sources. Avoid sparks, flames, and heat. Ventilate.

7. HANDLING AND STORAGE

Handling: Avoid inhalation of vapors**.** Use in a well-ventilated area to keep employee exposure below recommended limits. Use an approved respirator if necessary. Vapors are heavier than air and accumulate in low areas. Avoid contact with naked flames and hot surfaces as toxic decomposition products can be formed. Do not get in eyes or on skin.

Storage Conditions: Store in a clean, dry place, not near sources of heat, in direct sunlight or where temperatures exceed 122^{O}F/50^{O}C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:	**TLV(ACGIH)**	**PEL (OSHA)**
Methanol	200 ppm, TWA	200 ppm, 8 Hr. TWA
1,1,1,2-Tetrafluoroethane	None established	None established

Engineering Measures: Use adequate ventilation. Vapors are heavier than air and if working in confined or poorly ventilated areas, proper respiratory protection must be used to prevent exceeding the exposure limit.

Respiratory Protection: Mechanical ventilation, or respiratory protection with air supply should be used in low or enclosed areas. In poorly ventilated areas, or if a large release occurs, use an approved self-contained breathing apparatus (SCBA).

Eye Protection: Wear approved safety goggles.

Skin Protection: Avoid contact with skin (danger of frostbite). Wear cold insulting gloves/face shield/eye protection, if necessary. Use protective gloves when prolonged or frequently repeated contact occurs.

Hygiene Measures: Good personal hygiene practices are always advisable. Do not eat, drink, or smoke when using.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: -15^{O}F/-26^{O}C @ 760 mmHg

Density: 1.21 g/cc at 77^{O}F/25^{O}C

Vapor Density (Air=1): 3.6 at 77^{O}F/25^{O}C

pH Information: Neutral

Form: Liquefied Gas

Color: Colorless

Percent Volatile by Volume: 100%

Vapor Pressure: 96 psia at 77^{O}F/25^{O}C

Solubility in H_2O: 1.5 g/l at 77^{O}F/25^{O}C at 14.7 psia

Evaporation Rate (CCl4=1): N.A.

Appearance: Clear

Odor: Faint Ethereal

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Material and Conditions to Avoid: Avoid open flames and hot surfaces as corrosive and toxic decomposition products can be formed. Alkali metals, Alkaline earth metals, Powdered metals

Decomposition: Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming halogenated compounds, Hydrogen fluoride, Carbon monoxide, Carbon dioxide.

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Animal Data

1,1,1,2 Tetrafluoroethane

Inhalation:
4 hour, LC50 rat: >500000 ppm
Sensitization: Cardiac sensitization
Species: Dogs
Note: No-observed-effect level 50 000 ppm Lowest observable effect level 75 000
Repeated dose toxicity: Species: rat
NOEL: 40000ppm
Genotoxicity in vitro: Note: In vitro tests did not show mutagenic effects
Other Health Effects: This substance has no evidence of carcinogenic properties

Methanol

Inhalation: 4 hour LC50: 1282 mg/l in rats

Inhalation of high airborne concentrations can also irritate mucous membranes, cause headaches, sleepiness, nausea, confusion, loss of consciousness, digestive and visual disturbances and even death. NOTE: Odor threshold of methanol is several times higher than the TLV-TWA. Depending upon severity of poisoning and the promptness of treatment, survivors may recover completely or may have permanent blindness, vision disturbances and/or nervous system effects. Concentrations in air exceeding 1000 ppm may cause irritation of the mucous membranes.

Dermal: LD50: 17,000 mg/kg in rabbits

Moderately irritating to the skin. Can be absorbed through the skin and harmful effects have been reported by this route of entry. Effects are similar to those described in “Inhalation”.

Eyes: Methanol is a mild to moderate eye irritant. High vapor concentration or liquid contact with eyes causes irritation, tearing and burning.

Oral: LD50: 1187 - 2769 mg/kg in rats

Swallowing even small amounts of methanol could potentially cause blindness or death. Effects of sub lethal doses may be nausea, headache, abdominal pain, vomiting and visual disturbances ranging from blurred vision to light sensitivity.

Teratogenicity: Methanol has produced ferotoxicity in rats and teratogenicity in mice exposed by inhalation to high concentrations of methanol vapors.

Reproductive Toxicity: May cause reproductive toxicity (developmental endpoint).

Synergistic Products: In animals, high concentrations of methanol, can increase the toxicity of other chemicals, particularly liver toxins like carbon tetrachloride. Ethanol significantly reduces the toxicity of the methanol because it competes for the same metabolic enzymes, and has been used to treat methanol poisoning.

12. ECOLOGICAL INFORMATION

1,1,1,2 Tetrafluoroethane

Ecotoxicity: There is no data on the ecotoxicity of this product.
Additional ecology information: Accumulation in aquatic organisms is unlikely. The product contains greenhouse gases which may contribute to global warming.

Methanol

96 hour LC50 – Fish: 15400 – 29400 mg/l
48 hour EC50 – Daphnia: > 10000 mg/l
72 hour IC50 – Algae: ca. 22000 mg/l Selenastrum carpricornutum (Pseudokichnerela subcapitata)

13. DISPOSAL CONSIDERATIONS

Contaminated HFC - 134a can be recovered by distillation or removed to a permitted waste disposal facility. Comply with federal, state and local regulations. Do not puncture or incinerate cans. Empty aerosol cans before disposal.

14. TRANSPORT INFORMATION

U.S. DOT
Proper Shipping Name: Consumer Commodity
Hazard Class: ORM-D
Identification No. None
Packing Group: None

IATA
Proper Shipping Name: 1,1,1,2 Tetrafluoroethane
Hazard Class: 2.2
Identification No. UN 3159
Packing Group: None
(Authorization DOT-SP 10232 for CFR only)

IMDG
Proper Shipping Name: 1,1,1,2 Tetrafluoroethane
Hazard Class: 2.2
Identification No. UN 3159
Packing Group: None
(Authorization DOT-SP 10232 for CFR only)

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS:

TSCA: All ingredients are listed in TSCA inventory
SARA 302: No ingredients in this product are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Emission Reporting: This product does not contain any toxic chemical that exceed the threshold reporting levels established by SARA Title III, Section 313. None of the ingredients are listed.
SARA 311/312 HAZARDS: Acute Health Hazard & Sudden Release of Pressure Hazard

US STATE REGULATIONS:

California Proposition 65 Carcinogens and Reproductive Toxins: Yes, there are ingredients listed.

Massachusetts "Right to Know" List: None of the ingredients are listed.
Rhode Island "Right to Know" List: None of the ingredients are listed.
Minnesota "Right to Know" List: None of the ingredients are listed.
New Jersey "Right to Know" List: None of the ingredients are listed.
Pennsylvania "Right to Know" List: None of the ingredients are listed.

INTERNATIONAL INVENTENTORIES:

US – TSCA 12(b) Export Notification
None of the ingredients are listed.
CANADA: DSL/NDSL
All ingredients are listed or exempt.

16. OTHER INFORMATION

HMIS Ratings:

Health	- 1
Flammability	- 0
Reactivity	- 1

Personal Protective rating to be supplied by user depending on the conditions.

FOR INDUSTRIAL USE ONLY

REVISION DATE: MAY 2017