miller-stephenson

SDS
Safety Data Sheet

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-222L
Aero-Duster

Product Use: Duster

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
Use personal protective equipment as required.
Protect from sunlight.
Store in a well-ventilated place.

3. INGREDIENTS

Material (s)	CAS No.	Approximate %
Trans-1,3,3,3-Tetrafluoroprop-1-ene	29118-24-9	100

4. FIRST AID MEASURES

Inhalation: Immediately remove patient to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen, provided operator is present. Get medical attention.

Eye: Immediately flush with large amounts of water (lukewarm), lifting eyelids for at least 15 minutes. Get medical attention if symptoms persist.

Skin: Rapid evaporation of the liquid may cause frostbite. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water. If water is not available, cover with a clean, soft cloth or similar covering. Call a physician if irritation develops or persists.

Oral: Unlikely route of exposure. As this product is a gas, refer to the inhalation section. Do not induce vomiting without medical advice. Call a physician immediately.

Notes to Physician: Treat frost-bitten areas as needed.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Use the media appropriate for surrounding environment. Water mist, Dry powder, Foam, Carbon dioxide (CO2)

Specific Hazards during firefighting: Contents under pressure. Avoid contact with flame and hot surfaces because may burst and form toxic decomposition products (Hydrogen fluoride, Carbon oxides, Carbonyl halides, Halogenated compounds) 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. Exposure to decomposition products may be a hazard to health.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Immediately evacuate personnel to safe areas. Remove all ignition sources. Aerosols can explode when heated. Warn personnel of this hazard and unprotected personnel should not return until safe to do so. Ventilate area**.** 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.

Methods and material for containment and cleaning up: Ventilate. Allow to evaporate.

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. Intense heat may cause violent rupture of cans. Avoid contact with naked flames and hot surfaces as toxic decomposition products can be formed. Do not get in eyes or on skin. Do not puncture or burn.

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:	**WEEL (AIHA)**
Trans-1,3,3,3-Tetrafluoroprop-1-ene	800 ppm (TWA)

Engineering Measures: Local exhaust.

Respiratory Protection: In case of insufficient ventilation wear suitable respiratory equipment. Wear a positive-pressure supplied-air respirator.

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. Avoid breathing vapors. Do not eat, drink, or smoke when using.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: -2^{O}F/-19^{O}C

Density: 1.17 g/cc at 70^{O}F/21.1^{O}C

Vapor Density (Air=1): 4

pH Information: Neutral

Form: Liquefied Gas

Percent Volatile by Volume: 100%

Vapor Pressure: 62 psi at 68^{O}F/20^{O}C
162 psi at 129.9°F/54.4°C

Solubility in H_2O: 0.373 g/l

Color: Colorless

Odor: Faint Ethereal

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical Stability: Stable under normal conditions.

Conditions to avoid: Protect from sunlight and do not expose to temperatures exceeding 122^{O}F/50^{O}C.

Materials to avoid: Alkali metals

Hazardous Decomposition: This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming halogenated compounds, Carbon oxides, Hydrogen fluoride, Carbonyl halides.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Inhalation:
4 hour, LC50 rat: >207000 ppm
Skin irritation: No skin irritation in rabbits. Method: OECD Test Guideline 404
Eye irritation: No data available. Study technically not feasible.
Sensitization: Cardiac sensitization
Species: Dogs
Result: Did not cause sensitization on laboratory animals.
Repeated dose toxicity:
13 Weeks, Inhalation, rat: Causes mild effects on the heart. NOEL 5,000 ppm
Genotoxicity in vitro and in vivo: In vitro & in vivo tests - did not show mutagenic effects.
Reproductive toxicity: Test Method: Two-generation study
Species: Rat. Application Route: Inhalation. NOEL: >20,000 ppm Method: OECD Test Guideline 416
Teratogenicity: Species: Rabbit & Rat. Method: OECD 416. Did not show teratogenic effects in animal experiments.
Species: Rat. Application Route: Inhalation. NOAEC: 15,000 ppm. Method: OECD Test Guideline 414
Further information: Excessive exposure may cause central nervous system effects including drowsiness and dizziness. Excessive exposure may also cause cardiac arrhythmia. Rapid evaporation of the liquid may cause frostbite.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects:
96 hour, LC0: Cyprinus carpio (Carp): > 117 mg/l Method: OECD Test Guideline 203
48 hour, EC50: Daphnia magna (Water flea): > 160 mg/l Method: OECD Test Guideline 202
72 hour, NOEC: Toxicity to algae: > 170 mg/L Method OECD Test Guideline 201
Bioaccumulation: No bioaccumulation is to be expected (log Pow <=4)
Biodegradability: Aerobic: Not readily biodegradable

13. DISPOSAL CONSIDERATIONS

Comply with federal, state and local regulations. Do not puncture or incinerate cans.

14. TRANSPORT INFORMATION

U.S. DOT
Limited Quantity

IATA
Proper Shipping Name: LIQUEFIED GAS, N.O.S. (trans-1,3,3,3-Tetrafluoroprop-1-ene)
Hazard Class: 2.2
Identification No. UN 3163
Label: 2.2
Packing instruction (cargo aircraft); 200
Packing instruction (passenger aircraft); 200

IMDG
Proper Shipping Name: LIQUEFIED GAS, N.O.S. (trans-1,3,3,3-Tetrafluoroprop-1-ene)
Hazard Class: 2.2
Identification No. UN 3163
Label: 2.2
EmS Number; F-C, S-V
Marine pollutant: no

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS:

TSCA: All ingredients are listed in TSCA inventory.
SARA 302: No ingredients in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 HAZARDS: Acute Health Hazard & Sudden Release of Pressure Hazard

US STATE REGULATIONS:

California Proposition 65: This product does not contain any chemical known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL INVENTENTORIES:

CANADA
WHMIS Classification: A: Compressed Gas

16. OTHER INFORMATION

HMIS Ratings:

Health	- 1
Flammability	- 1
Reactivity	- 0

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: MARCH 2023