



1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-782
Vertrel XF

Product Use: Cleaning Solvent

MANUFACTURER/DISTRIBUTOR:

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

Emergency Phone Number:
(800) 424-9300

2. HAZARDS IDENTIFICATION

GHS Hazard classification

Not a dangerous substance or mixture according to 29 CFR 1910.1200

GHS Label elements:

Pictogram: not required

Signal word: not required

Other hazards which do not result in classification or are not covered by GHS

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Rapid evaporation of the product may cause frostbite.

Misuse of intentional inhalation abuse may lead to death without warning symptoms, due to cardiac effects.

3. INGREDIENTS

<u>Material (s)</u>	<u>CAS No.</u>	<u>Approximate %</u>
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	100%

4. FIRST AID MEASURES

Inhalation: If inhaled, immediately remove to fresh air. Keep person calm. Get medical attention if symptoms occur.

Eye: In case of contact, immediately flush eyes with plenty of water. Get medical attention if irritation develops and persists.

Skin: Wash skin with water and soap after contact. Get medical attention if symptoms occur.

Oral: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed: May cause cardiac arrhythmia. Inhalation may provoke the following symptoms: Dizziness.

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flash Point: Does not flash

Method: TCC

Fire and Explosion: Containers may rupture under fire conditions. Decomposition (see section 10) may occur.

Hazardous combustion products: Hydrogen fluoride, Carbonyl fluoride, Carbon oxides.

Extinguishing Media: Water spray, Alcohol-resistant foam, Dry Chemical, Carbon Dioxide (CO₂).

Special Fire Fighting Instruction: Use water spray to cool containers. Evacuate personnel to safe area. Self-contained breathing apparatus (SCBA) maybe required if a large amount of material is released under fire conditions. Fight fire from a distance, heat may rupture containers. Exposure to combustion products may be a hazard to health.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up. Evacuate personnel, thoroughly ventilate area. In case of insufficient ventilation use wear suitable respiratory equipment.

Environmental precautions: Dike spill. Prevent material from entering sewers, waterways, or low areas.

Methods and materials for containment and clean up: If containers rupture or leak, evacuate the area and provide ventilation, especially in low places where heavy vapors might collect. Only personnel equipped with proper respiratory and skin/eye protection should be permitted in area of large spill. Soak up with earth, sand, vermiculite or other non-combustible absorbent material. Place in a container for disposal according to local/national regulations (Section 13).

7. HANDLING AND STORAGE

Handling: Use in a well-ventilated area to avoid breathing vapors. Vapors are heavier than air and accumulate in low areas. Use only with adequate ventilation. Where ventilation is inadequate, use appropriate respiratory protection. Avoid contact with skin eyes, or clothing. Wash thoroughly after handling.

Storage Conditions: Store in a well-ventilated place and keep container tightly closed. Do not allow stored product to exceed 52°C (125°F) to prevent leakage or potential rupture of container from pressure and expansion. Protect from freezing temperatures. If solvent is stored below -10°C (14°F), mix prior to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Exposure Limits:</u>	<u>TLV (ACGIH)</u>	<u>PEL (OSHA)</u>
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	Not Established	Not Established

Respiratory Protection: Avoid breathing vapors, mists or spray. Use with mechanical ventilation in enclosed or low places. Local exhaust should be used when a large amount is released. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Where concentrations are above the recommended limits or are unknown, appropriate respiratory protection should be worn. Use NIOSH/MSHA approved respirator.

Eye Protection: Avoid eye contact. Use chemical goggles or safety glasses with side shields.

Skin Protection: Avoid contact with skin. Use gloves impervious should be used when handling liquid (eg Viton).

Hygiene measures: Do not eat, drink or smoke when using this product. Do not breathe vapors or spray mist. Avoid contact with skin, eyes, or clothing. Wash exposed areas thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 131°F/55°C	Percent Volatile by Volume: 100
Density: 1.58 g/cc @ 77°F/25°C	Vapor Pressure: 235 mmHg @ 77°F/25°C
Vapor Density (Air=1): N.A.	Solubility in H₂O: 0.10 - 0.14 g/l @ 68°F/20°C
pH Information: Neutral	Evaporation Rate (CC14=1): N.A.
Form: Liquid	Appearance: Clear & Colorless
Color: Colorless	Odor: Slight, ether-like

10. STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Material and Conditions to Avoid: Oxidizing agents.

Decomposition: No decomposition products are known.

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

Information on likely routes of exposure: Inhalation, Skin contact, Ingestion, Eye contact

Acute Toxicity: Not classified based on available information.

Skin Corrosion/Irritation: Not classified based on available information.

Serious Eye Irritation/ Eye Irritation: Not classified based on available information.

Skin Sensitization: Not classified based on available information.

Respiratory Sensitization: Not classified based on available information.

Germ Cell Mutagenicity: Not classified based on available information.

Carcinogenicity: Not classified based on available information.

Reproductive toxicity: Not classified based on available information.

STOT-single exposure: Not classified based on available information.

STOT-repeated exposure: Not classified based on available information.

Aspiration toxicity: Not classified based on available information.

12. ECOLOGICAL INFORMATION

1,1,1,2,2,3,4,5,5,5-Decafluoropentane:

Ecotoxicity: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

Other adverse effects

Results of PBT and vPvB assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

13. DISPOSAL CONSIDERATIONS

Comply with federal, state and local regulations. Remove to a permitted waste disposal facility.

14. TRANSPORT INFORMATION

U.S. DOT

Not Regulated

IATA

Not Regulated

IMDG

Not Regulated

15. REGULATORY INFORMATION

U.S. Federal Regulations

TSCA: All ingredients are listed in TSCA inventory.

1,1,1,2,2,3,4,5,5,5-Decafluoropentane (CAS# 138495-42-8) is controlled by TSCA Section 5, Significant New Use Rule (SNUR; 40 CFR 721.5645) The approved uses are: precision and general cleaning, carrier fluid, displacement drying, printed circuit board cleaning, particulate removal and film cleaning, process medium, heat transfer fluid (dielectric and non-dielectric), and test fluid. Processors and users of this substance must also comply with the applicable general SNUR requirements set forth in 40 CFR 721 subpart A, including export notification requirements if applicable (40 CFR 721.20), and the applicable record keeping requirements set forth at 40 CFR 721.125.

16. OTHER INFORMATION

FOR INDUSTRIAL USE ONLY

REVISION DATE: OCTOBER 2017

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.