



1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-143XD-1.5
PTFE Release Agent/Dry Lubricant

Product Use: Release Agent or Dry Lubricant

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

Acute aquatic toxicity: Category 3
Chronic aquatic toxicity: Category 3.

GHS Label elements:

Pictogram: not required
Signal word: not required

Hazardous warnings: Harmful to aquatic life with long lasting effects.

Hazardous prevention measures: Avoid release to the environment.
Dispose of contents/container to an approved waste disposal plant.

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.
May cause cardiac arrhythmia
The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.
Repeated episodes of polymer fume fever may result in persistent lung 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 (HFC-43-10mee)	138495-42-8	98 – 99
Poly-TFE, Alpha-Hydro-Omega-(Methylcyclohexyl)	65530-85-0	< 2.0
Poly-Tetrafluoroethylene	9002-84-0	< 0.5

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air. If not breathing, give artificial respiration. Give oxygen as necessary, if qualified personnel is available. Get medical attention if necessary.

Eye: Flush with large amounts of water for at least 15 minutes, lifting eyelids until no evidence of the chemical remains. Get medical attention if necessary.

Skin: Wash skin with water after contact. Wash contaminated clothing before use. Get medical attention if necessary.

Oral: If swallowed, Do NOT induce vomiting, because the hazard of aspirating the material into the lungs is considered greater than swallowing it. Immediately give 2 glasses of water. Never give anything to an unconscious person. Call a physician.

If vomiting occurs naturally, have a victim lean forward to reduce the risk of aspiration.

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.

Extinguishing Media: As appropriate for surrounding area.

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 spilled under fire conditions. Fight fire from a distance, heat may rupture containers.

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: 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, use self-contained breathing apparatus.

Initial Containment

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

Spill Clean Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

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. Do not store or consume food, drink, or tobacco in areas where they may become contaminated with this material.

Storage Conditions: Store in a well-ventilated place and keep container tightly closed. Keep away from heat, sparks and flames. 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>	<u>AEL* (DuPont)</u>
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	Not Established	Not Established	200 ppm, 8 & 12 Hr. TWA 400 ppm, Ceiling
Polytetrafluoroethylene	Not Established	Not Established	10 mg/m ³ , 8 Hr. TWA, total dust 5 mg/m ³ , 8 Hr. TWA, respirable dust

*AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

Respiratory Protection: Avoid breathing vapors, mists or spray. Use with mechanical ventilation in enclosed or low places. Local exhaust should be used when large amounts are released. If necessary to keep exposure limits below permissible limits, use NIOSH approved respirators. In poorly ventilated areas, or if a large amount is released, use an approved self-contained breathing apparatus.

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.

Prevention of Swallowing: Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 131°F/55°C Approx.

Percent Volatile by Volume: 99 - 98%

Density: 1.6 g/cc at 68°F/20°C

Vapor Pressure: 226 mm Hg at 77°F/25°C

Vapor Density (Air=1): N.A.

Solubility in H₂O : Insoluble

pH Information: Neutral

Evaporation Rate (CC14=1): >1

Form: Liquid

Appearance: Milky

Color: White

Odor: Faint Ethereal Odor

10. STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Material and Conditions to Avoid: Strong alkali or alkaline earth metals. Finely powdered metals. Strong bases.

Decomposition: This product can be decomposed by high temperatures (flame, glowing metal surfaces, etc.) forming Fluorinated hydrocarbons, Hydrogen fluoride, Carbon dioxide (CO₂), Carbon monoxide.

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: None of the components in this product are listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

1,1,1,2,2,3,4,5,5,5-Decafluoropentane (HFC-43-10mee)

Inhalation: 4 hour LC50: 114mg/l in rats, Central nervous system effects, Convulsions

Oral: LD50: > 5,000 mg/kg in rats

Dermal: LD50: > 5,000 mg/kg in rabbits

Skin Irritation: No skin irritation, rabbit

Eye Irritation: No eye irritation, rabbit

Skin Sensitization: Did not cause sensitization on laboratory animals, guinea pig

Repeated dose toxicity: Inhalation, rat

No toxicologically significant effects were found.

Reproductive toxicity: Animal testing showed no reproductive toxicity.

Teratogenicity: Animal testing showed no developmental toxicity.

Poly-TFE, Omega-Hydro-Alpha-(Methylcyclohexyl)-

Oral: ADL/rat: >17,000 mg/kg

Skin irritation: No skin irritation, guinea pig

Eye irritation: No eye irritation, rabbit

Skin sensitization: Did not cause sensitization on laboratory animals., guinea pig

Poly-Tetrafluoroethylene

Oral: LD50/rat: >11,280 mg/kg

Skin irritation: No skin irritation, guinea pig

Eye irritation: No eye irritation, rabbit

Skin sensitization: Did not cause sensitization on laboratory animals., guinea pig

Repeated dose toxicity: Oral, rat

No toxicologically significant effects were found.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

1,1,1,2,2,3,4,5,5-Decafluoropentane (HFC-43-10mee):

96 hour LC50 in Fathead minnows: 27.2 mg/L

96 hour LC50 in Rainbow trout: 13.9 mg/L

48 hour LC50 in Daphnia magna: 11.7 mg/L

72 hour EC50 in green algae: > 120mg/L

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.

SARA/TITLE III HAZARD CATEGORIES:

Product Hazard Categories:

Acute Health	- Yes
Chronic Health	- No
Fire Hazard	- No
Reactivity Hazard	- No
Pressure Hazard	- No

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

NPCA-HMIS Ratings:

Health	- 1
Flammability	- 0
Reactivity	- 0

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: NOVEMBER 2014

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.