



1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-143TE-5.0
DPMS-N0413B-5.0
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

Hazard classification

Harmful if inhaled: Category 4

Hazardous to the aquatic environment, long term hazard: Category 3.

Label elements:

Signal word

Warning

Pictograms



Hazard Statements

Harmful if inhaled.

Harmful to aquatic life with long lasting effects.

Precautionary Statements

Avoid breathing mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Avoid release into the environment.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

Other Hazards

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. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Prolong skin contact may cause dermatitis or frostbite. Misuse or 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	20 – 24
Trans,1.2-Dichloroethylene	156-60-5	56 – 60
Isopropyl Alcohol	67-63-0	12 – 18

4. FIRST AID MEASURES

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

Eye: Flush with a large amount of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue to rinse. Get medical attention if necessary.

Skin: Wash with water for at least 15 minutes. Remove contaminated clothing. Wash contaminated clothing before reuse. Get medical attention if necessary.

Oral: If swallowed, DO NOT induce vomiting unless directed to do so by a physician. Rinse mouth thoroughly with water. Never give anything to an unconscious person. Get medical attention.

Most important symptoms/effects, acute and delayed: The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

5. FIRE FIGHTING MEASURES

Flash point: None (Pensky-Martens closed cup)

Suitable Extinguishing Media: Water spray, Alcohol-resistant foam, Dry chemical, Carbon dioxide (CO₂)

Unsuitable extinguishing media: No applicable data available.

Special hazards: Exposure to combustion products may be hazardous to health. Hazardous combustion products: Hydrogen fluoride, Carbonyl fluoride, Carbon oxides, Chlorine compounds.

Special Fire Fighting Instruction: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment

Further information: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate personnel to safe areas. Cool containers with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

Evacuate personnel, ventilate area with fresh air, if a large amount is accidental released, use self-contained breathing apparatus. Dike spill. Prevent material from entering sewers, waterways or low areas. Soak up with sand, earth, vermiculite or other non-combustible absorbent materials.

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. Use appropriate respiratory protection, when ventilation is inadequate. Avoid contact with skin or eyes. Wash thoroughly after handling. When using do not eat, drink, or smoke. Poly-Tetrafluoroethylene should not be handled around tobacco products. The inhalation of vapors in the presence of tobacco products will cause polymer fume fever.

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.

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
Trans,1,2-Dichloroethylene	200 ppm, 8 Hr. TWA	200 ppm, 8 Hr. TWA
Isopropyl Alcohol	400 ppm, TWA	400 ppm, 8 Hr. TWA

Respiratory Protection: Avoid breathing vapors, mists or spray. Use with sufficient ventilation especially for enclosed or low places. If necessary to keep exposure limits below permissible limits, use NIOSH approved respirators, such as an air-purifying respirator with organic cartridges. In poorly ventilated areas, 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 to this material when prolonged or frequently repeated contact occurs. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often.

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: 122-124°F/50-51°C

Percent Volatile by Volume: 95%

Density: 1.24 g/cc at 77°F/25°C

Vapor Pressure: 495 mm Hg at 77°F/25°C F

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

Solubility in H₂O : N.A.

pH Information: Neutral

Evaporation Rate (CC14=1): >1

Form: Liquid

Appearance: Suspended white solids

Color: Opaque

Odor: Slight Odor

10. STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Material and Conditions to Avoid: Strong alkali or alkaline earth metals. Acids. Strong oxidizing agents. Open flame.

Decomposition: Carbon oxides, fluorinated compounds.

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

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.

Trans-1,2-Dichloroethylene

Acute Oral: LD50: 7902 mg/kg in rats

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

Acute Inhalation: 4 hour LC50: 95.4 mg/l in rats. Test atmosphere: vapor. Method: OECD Test Guideline 403

Skin Corrosion/Irritation: Mild skin irritation in rabbits

Serious Eye Irritation/ Eye Irritation: Mild eye irritation in rabbits. Reversing within 7 days.

Skin Sensitization: No data available

Respiratory Sensitization: No data available

Germ Cell Mutagenicity: Evidence does not support classification of a germ cell mutagen.

Carcinogenicity: Not classified based on available information.

Reproductive toxicity: Not classified based on available information.

STOT-single exposure: May cause drowsiness and dizziness.

STOT-repeated exposure: No significant health effects observed in animals at concentrations of 250 ppmV/6h/d or less.

Aspiration toxicity: Not classified based on available information.

Isopropyl Alcohol

Acute Toxicity

Ingestion: LD50, Rat 4,700 - 5,800 mg/kg.

Skin Absorption: LD50, Rabbit 13,000 mg/kg

Inhalation: LC50, Rat, 16,000 ppm

Skin Corrosion/Irritation: Mild skin irritation in rabbits.

Serious Eye Irritation/ Eye Irritation: Eye irritation, 24 h, in rabbits.

Skin Sensitization: No data available

Respiratory Sensitization: No data available

Germ Cell Mutagenicity: No data available

Carcinogenicity: Not classified based on available information.

Reproductive toxicity: No data available

STOT-single exposure: Inhalation, Oral – May cause drowsiness and dizziness.

STOT-repeated exposure: No data available

Aspiration toxicity: No data available

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).

Trans-1,2-Dichloroethylene

96 hour LC50 in *Lepomis macrochirus* (Bluegill sunfish): 135 mg/l
48 hour EC50 in *Daphnia magna* (Water flea): 220 mg/l
72 hour EC50 in *Pseudokirchneriella subcapitata* (Green algae): 36.36 mg/l

Biodegradability: Not readily biodegradable. Method: OECD Test Guideline 301D

Isopropyl Alcohol

Ecotoxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Aquatic: Fish: 96 hour LC50 in Bluegill (*Lepomis macrochirus*): > 1400 mg/l

Persistence and degradability: No data is available on the degradability of this product.

Bioaccumulative potential: Partition coefficient n-octanol/ water (log Kow): 0.05

Mobility in soil: No data available.

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	- 1
Reactivity	- 1

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: JANUARY 2018

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.