

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-143HN
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

Serious Eye Damage/Eye Irritation: Category 2A
Specific Target Organ Toxicity (single exposure): Category 3

Label elements:

Signal word

Warning

Pictograms



Hazard Statements

H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary Statements

Avoid breathing mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash skin thoroughly after handling.
Wear eye protection/face protection.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/ container to an approved waste disposal plant.

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. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Misuse or intentional inhalation abuse may lead to death without warning symptoms, due to cardiac effects. Rapid evaporation of the product may cause frostbite.

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	35 – 40
Trans,1.2-Dichloroethylene	156-60-5	35 – 41
Isopropyl Alcohol	67-63-0	18 – 25

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air. Get medical attention if necessary.

Eye: Immediately, flush with large amounts of water for at least 15 minutes, lifting eyelids until no evidence of the chemical remains. Remove contact lenses, if present and easy to do. Continue to rinse. Get medical attention.

Skin: Wash with water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing and clean shoes before use. Get medical attention.

Oral: DO NOT induce vomiting without medical advice. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed: May cause cardiac arrhythmia.

Skin contact may provoke the following symptoms: Dermatitis, Irritation, Pain, superficial burning sensation, Itching, Redness, Swelling of tissue, Rash, Discomfort

Eye contact may provoke the following symptoms: Pain, tearing, Swelling of tissue, Redness, Impairment of vision.

Inhalation may provoke the following symptoms: Unconsciousness, Drowsiness, Lack of coordination, confusion, Dizziness, Central nervous system depression.

Effects of breathing high concentrations of vapor may include: Tiredness, Drowsiness, central nervous system effects, Convulsions

Adverse effects from repeated inhalation may include: central nervous system effects

Aspiration may cause pulmonary edema and pneumonitis.

Causes serious eye irritation. May cause drowsiness or dizziness.

5. FIRE FIGHTING MEASURES

Flash Point: Does not flash.

Test Method: Pensky-Martens closed cup

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

Unsuitable extinguishing media: None known.

Special hazards: Vapors may form explosive mixture with air. Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Hydrogen fluoride, Fluorine compounds, Carbonyl fluoride, Carbon oxides, Chlorine compounds.

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate personnel to safe areas. Cool unopened containers with water spray.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate personnel to safe area. Use personal protective equipment.

Environmental precautions: If containers rupture, prevent material from entering sewers, waterways, or low areas. Should not be released into the environment. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Spill Cleanup: Contain spillage, and then collect with inert absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations.

7. HANDLING AND STORAGE

Handling: Use in a well-ventilated area to avoid breathing vapors. Use only with adequate ventilation. Use only in an area equipped with explosion-proof exhaust ventilation if advised by assessment of the local exposure potential. Do not eat, drink, or smoke. Do not swallow. Avoid contact with skin, eyes, or clothing. Wash thoroughly after handling.

Storage Conditions: Store tightly sealed in a clean, dry place, and well-ventilated place. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Do not store in temperatures that exceed 115°F/46°C, because the containers could leak or rupture from pressure and expansion. Take care to prevent spills, waste and minimize release to the environment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

	<u>ACGIH</u>	<u>OSHA</u>
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	Not Established	Not Established
Trans,1,2-Dichloroethylene	200 ppm	200 ppm
Isopropyl Alcohol	400 ppm	400 ppm

Respiratory Protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

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 (eg. Viton) when prolonged or frequently repeated contact occurs. For special applications, we recommend clarifying the resistance to chemicals of the protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 122-124°F/50-51°C

Density: 1.24 g/cc at 77°F/25°C

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

pH Information: Neutral

Form: Liquid

Color: White to off-white

Percent Volatile by Volume: 97%

Vapor Pressure: 227 mm Hg at 77°F/25°C F

Solubility in H₂O: N.A.

Evaporation Rate (CC14=1): N.A.

Appearance: Suspended white solids

Odor: Slight Odor

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Vapors may form flammable mixture in the air. In use may form flammable/explosive vapor-air mixture.

Material and Conditions to Avoid: None known.

Hazardous decomposition products: No hazardous decomposition products are known.

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 Oral: LD50: > 5000 mg/kg in rats. Method: OECD Test Guideline 401

Acute Inhalation (vapor): 4 hour LC50: 114.428 mg/l in rats. Method: OECD Test Guideline 403

Acute Dermal: LD50: > 5000 mg/kg in rabbits. Method: OECD Test Guideline 402

Skin Corrosion/Irritation: No skin irritation in rabbits. Method: OECD Test Guideline 404

Serious Eye Irritation/ Eye Irritation: No eye irritation in rabbits. Method: OECD Test Guideline 405

Skin Sensitization: No skin sensitization in Guinea pigs. Buehler Test. Method: OECD Test Guideline 406

Respiratory Sensitization: Not classified based on available information.

Germ Cell Mutagenicity: Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity: Not classified based on available information.

Reproductive toxicity: Weight of evidence does not support classification for reproductive toxicity.

STOT-single exposure: Inhalation (vapor): No significant health effects observed in animals at concentrations of 20mg/l/4h or less.

STOT-repeated exposure: Inhalation (vapor): No significant health effects observed in animals at concentrations of 1mg/l/6h/d or less.

Aspiration toxicity: No aspiration toxicity classification.

Trans-1,2-Dichloroethylene

Acute Oral: LD50: 7902 mg/kg in rats. Method: OECD Test Guideline 420

Acute Dermal: LD50: > 5,000 mg/kg in rabbits. Method: OECD Test Guideline 402

Acute Inhalation: 4 hour LC50: 95.5 mg/l in rats. Test atmosphere: vapor. Method: OECD Test Guideline 403

Skin Corrosion/Irritation: Mild skin irritation in rabbits. Method: OECD Test Guideline 404

Serious Eye Irritation/Eye Irritation: Eye irritation in rabbits. Reversing within 7 days. Method: OECD Test Guideline 405

Skin Sensitization: Not classified based on available information.

Respiratory Sensitization: Not classified based on available information.

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

Carcinogenicity: Not classified based on available information.

Reproductive toxicity: Test Type: Embryo-fetal development. Inhalation in rats. Negative. Method: OECD Test Guideline 414

STOT-single exposure: May cause drowsiness and dizziness.

STOT-repeated exposure: Inhalation: 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 Oral: LD50, Rat, > 5,000 mg/kg

Acute Dermal: LD50, Rabbit, > 5,000 mg/kg

Acute Inhalation (vapor): 6 hour LC50, Rat > 25 mg/l

Skin Corrosion/Irritation: No skin irritation in rabbits.

Serious Eye Damage/Irritation: Irritation to eyes in Rabbits, reversing within 21 days.

Skin Sensitization: Buehler Test (skin contact) is negative in Guinea pig. Method OECD Test Guideline 406

Respiratory Sensitization: Not classified based on available information.

Germ Cell Mutagenicity: In vitro and In vivo - Not Mutagenic

Carcinogenicity: Negative in rats exposed 104 weeks by inhalation (vapor). Method: OECD Test Guideline 451

Reproductive Toxicity: Negative in rats by ingestion based on Two-generation reproduction toxicity study and Embryo-fetal development.

STOT- single exposure: May cause drowsiness or dizziness.

STOT- repeated exposure: Rat exposed 104 weeks by inhalation (vapor). NOAEL: 12.5 mg/l

Aspiration toxicity: Not classified based on available information.

12. ECOLOGICAL INFORMATION

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

96 hour LC50 in Danio rerio (zebra fish): 13 mg/l. Method: OECD Test Guideline 203

48 hour EC50 in Daphnia magna (Water flea): 10.6 mg/l. Method: OECD Test Guideline 202

72 hour EC50 in Selenastrum capricornutum (Green algae): >120 mg/l. Method: OECD Test Guideline 201

21 days NOEC in Daphnia magna (Water flea): 1.72 mg/l. Method: OECD Test Guideline 211

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

Bioaccumulative potential: Bioaccumulation is unlikely. Partition coefficient: noctanol/water: log Pow: 2.4 (75 °F / 24 °C)

Mobility in soil: No data available

Trans-1,2-Dichloroethylene

96 hour LC50 in *Lepomis macrochirus* (Bluegill sunfish): 135 mg/l. Based on data from similar materials.

48 hour EC50 in *Daphnia magna* (Water flea): 220 mg/l. Method: EPA-660/3-75-009

72 hour EC50 in *Pseudokirchneriella subcapitata* (Green algae): 36.36 mg/l. Method: OECD Test Guideline 201

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

Bioaccumulative potential: Partition coefficient: n-octanol/water: log Pow: 2.06

Mobility in soil: No data available

Isopropyl Alcohol

Toxicity to fish: 96 hour LC50, fathead minnow (*Pimephales promelas*): 9,640 mg/l

Toxicity to daphnia and other aquatic invertebrates: 24 hour EC50, water flea (*Daphnia magna*): >10,000 mg/l

Toxicity to microorganisms: 16 hour EC50, (*Pseudomonas putida*): >1,050 mg/l

Biodegradability: Rapidly degradable. BOD/COD: BOD: 1.19 (BOD5)COD: 2.23BOD/COD: 53 %

Bioaccumulative potential: Partition coefficient: n-octanol/water: log Pow: 0.05

Mobility in soil: No data available

13. DISPOSAL CONSIDERATIONS

If recycling is not practicable, dispose of in compliance with local regulations. Remove to a permitted waste disposal facility. The product should not be allowed to enter drains, water courses or the soil.

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) - The United States Environmental Protection Agency has established a Significant New Use Rule (SNUR; 40 CFR 721.5645) for this product. Also, this product requires an export notification under TSCA Section 12(b) and 40 CFR Part 707 Subpart D.

CERCLA Reportable Quantity: Trans-Dichloroethylene, 156-60-5: Component RQ is 1000 lbs.

SARA 304 Extremely Hazardous Substances Reportable Quantity: This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity: This material does not contain any components with a section 302 EHS RQ.

SARA 311/312 Hazards: Serious eye damage or eye irritation. Specific target organ toxicity (single or repeated exposure).

SARA 313 Regulated Chemicals: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR 372). They may not be intentionally present in the product; however, it is possible that it may be present as an impurity and the exact concentration may vary between lots:

3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctanesulphonic acid, CAS No.: 27619-97-2, < 0.06 ppb

Perfluorononanoic acid, CAS No.: 375-95-1, < 1.2 ppb

Perfluorododecanoic acid, CAS No.: 307-55-1, < 1.2 ppb

Perfluorodecanoic acid, CAS No.: 335-76-2, < 1.4 ppb

Perfluoropalmitic acid, CAS No.: 67905-19-5, < 1.4 ppb

Perfluorohexanoic acid, CAS No.: 307-24-4, < 1.6 ppb

Perfluorobutanoic acid, CAS No.: 375-22-4, < 1.8 ppb

Octadecanoic acid, pentatriacontafuoro-, CAS No.: 16517-11-6, < 1.8 ppb

Perfluorotetradecanoic acid, CAS No.: 376-06-7, < 2.2 ppb

Perfluorooctanoic acid, CAS No.: 335-67-1, < 5 ppb

U.S. State Regulations

California Prop. 65

WARNING: This product can expose you to chemicals including Pentadecafluorooctanoic acid, which is/are known to the State of California to cause cancer, and Carbon monoxide, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov. Note to User: This product is not made with PFOA nor is PFOA intentionally present in the product; however, it is possible that PFOA may be present as an impurity at background (environmental) levels.

16. OTHER INFORMATION

NPCA-HMIS Ratings:

Health - 2

Flammability - 0

Physical Hazard - 0

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: November 13, 2025

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.