



1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-143AX
DPMS A1229B
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/Irritation: Category 2A.

Label elements:

Signal word

Warning

Pictogram



Hazard Statements

Causes serious eye irritation.

Prevention Statements

Wash thoroughly after handling.

Wear eye protection/face protection.

Use only in a well-ventilated area.

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.

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

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. Repeated episodes of polymer fume fever may result in persistent lung effects. This material may make the heart more susceptible to arrhythmias. Catecholamines such as adrenaline and other compounds having similar effects, should be reserved for emergencies. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. May cause cardiac arrhythmia. Prolonged skin contact may defat the skin and produce dermatitis.

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	64 - 67
Isopropyl Alcohol	67-63-0	32 - 34
Poly-TFE, Omega-Hydro-Alpha-(Methylcyclohexyl)-	65530-85-0	< 1
Poly-Tetrafluoroethylene	9002-84-0	< 0.5

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air, lie down. Keep patient warm and at rest. 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. Remove contact lenses, if present and easy to do. Continue to rinse.

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

Oral: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Give 2 glasses of water. If vomiting occurs, lean victim forward to reduce the risk of aspiration. Call a physician.

Most important symptoms/effects, acute and delayed: Dizziness

Notes to Physician: Do not give adrenaline or similar drugs. Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

5. FIRE FIGHTING MEASURES

Flash Point: None

Method: TCC

Suitable Extinguishing Media: Water spray, Water mist, Dry chemical, Carbon dioxide (CO₂)

Unsuitable extinguishing media: No applicable data available.

Special hazards: Fire or intense heat may cause violent rupture of packages. The product is not flammable. Vapors may form flammable mixture in air. Hazardous combustion products: Hydrogen fluoride, Fluorinated hydrocarbons, Carbonyl fluoride, Carbon oxides, Hydrogen chloride.

Special Fire Fighting Instruction: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire. Exposure to decomposition products may be a hazard to health.

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

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel): Evacuate personnel to safe area. Ventilate area, especially low or enclosed places where heavy vapors might collect. In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental precautions: If containers rupture, prevent material from entering sewers, waterways, or low areas. Should not be released into the environment. Do not allow contact with soil, surface or ground water.

Spill Cleanup: Contain spillage, and then collect with non-combustible 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. 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. 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 tightly sealed in a clean, dry place, and well ventilated place. Do not store in temperatures that exceed 125°F/52°C, because the containers could leak or rupture 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
Isopropyl Alcohol	200 ppm, TWA	400 ppm, 8 Hr. TWA	

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

Respiratory Protection: Avoid breathing vapors, mists or spray. Use with sufficient ventilation especially for enclosed or low places. Vapors are heavier than air and can cause suffocation by reducing oxygen. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 128°F/53°C

Percent Volatile by Volume: 99%

Density: 1.6 g/cc at 77°F/25°C

Vapor Pressure: 290 mm Hg at 77°F/25°C

Vapor Density (Air=1): 4.0

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.

Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: No applicable data available.

Material and Conditions to Avoid: Open flames and high temperatures. Alkali or alkaline earth metals. Powder metals. Powdered metal salts, Nitrogen oxides (NO_x), Acids, bases and strong oxidizing agents, Oxygen.

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

11. TOXICOLOGICAL INFORMATION

Animal Data

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.

Mutagenicity: Animal testing showed no mutagenic effects.

Reproductive toxicity: Animal testing showed no reproductive toxicity.

Teratogenicity: Animal testing showed no developmental toxicity.

Isopropyl Alcohol

Acute Toxicity

Ingestion: LD50, Rat, 4,710 mg/l

Skin Absorption: LD50, Rabbit, 12,870 mg/kg

Inhalation: LC50, 4 h, Vapor, Rat, 72.6 mg/l

Skin Corrosion/Irritation: No significant irritation in multiple animal species.

Serious Eye Damage/Irritation: Serious eye irritant in Rabbits

Sensitization Skin: Not sensitizing in Guinea pigs

Sensitization Respiratory: Data not available or insufficient for classification

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

Carcinogenicity: Some positive data exists with inhalation in rats, but the data is not sufficient for classification.

Reproductive and/or Developmental Toxicity: Some positive developmental data exist in rats, but the data are not sufficient for classification.

Repeated Dose Toxicity: In Rats, some positive data exists, on the following organs: bladder and kidney, but not sufficient for classification.

Single Dose Toxicity: In Humans, some positive data exists on the nervous and respiratory systems, but not sufficient for classification. May cause drowsiness or dizziness, if ingested.

Aspiration Hazard: Not an aspiration hazard

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

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

Isopropyl Alcohol

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (*Pimephales promelas*), flow-through, 96 h: 9,640 - 10,400 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, 48 h, immobilization: 7,550 - 13,299 mg/l

Aquatic Plant Toxicity

EC50, alga *Scenedesmus* sp., Growth rate inhibition, 72 h: > 1,000 mg/l

Toxicity to Micro-organisms

EC50; activated sludge, respiration inhibition: > 1,000 mg/l

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) 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, 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: APRIL 2015

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.