



## 1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

**Name:** MS-114D  
Conformal Coating Stripper

**Product Use:** Conformal Coating Stripper

### **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**

Acute toxicity (Oral): Category 4  
Acute toxicity (Inhalation): Category 4  
Skin corrosion/irritation: Category 2  
Serious eye damage/eye irritation: Category 2A  
Reproductive toxicity: Category 1B  
Specific Target Organ Toxicity (single exposure): Category 1  
Hazardous to the aquatic environment, long-term hazard: Category 3

### **Label elements:**

#### **Signal word**

Danger

#### **Pictograms**



**Hazard Statements**

Harmful if swallowed  
 Harmful if inhaled.  
 Causes skin irritation.  
 Causes serious eye irritation.  
 May damage fertility or the unborn child.  
 Causes damage to organs.  
 Harmful to aquatic life with long lasting effects.

**Precautionary Statements**

Do not handle until all safety precautions have been read and understood.  
 Do not breathe fume/mist/vapors/spray.  
 Wash skin thoroughly after handling.  
 Do not eat, drink, or smoke when using this product.  
 Use only outdoors or in a well-ventilated area.  
 Avoid release to the environment.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
 Rinse mouth.  
 IF ON SKIN: Wash with plenty of soap and water.  
 IF SKIN irritation occurs: Get medical advice/attention.  
 Take off contaminated clothing and wash before reuse.  
 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.  
 If exposed: Call a POISON CENTER or doctor/physician.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Dispose of contents/ container in accordance with local, regional, national, and international regulations.

**Other Hazards**

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.

**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	22 - 30
Trans,1,2-Dichloroethylene	156-60-5	45 - 50
Methanol	67-56-1	4 - 10
N-Methyl-2-Pyrrolidone	872-50-4	18 - 22

**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 plenty of water for at least 20 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 plenty of water for at least 15 minutes. 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. Call a physician.

**Most important symptoms/effects, acute and delayed:** Dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Prolonged exposure may cause chronic effects. Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea); irritation of nose, throat and airways; confusion. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May damage fertility or the unborn child. 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

**Flammability:** This product is not flammable. Does not flash                      **Method:** TCC

**Suitable Extinguishing Media:** Alcohol resistant foam, Dry chemical, Carbon dioxide (CO<sub>2</sub>)

**Unsuitable extinguishing media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

**Special hazards:** The product is not flammable but may burn at hot temperatures. Gas/vapor are heavier than air. May accumulate in confined spaces, particularly at or below ground level. Product is not explosive. Containers may rupture when exposed to excessive heat. Hazardous reactions will not occur under normal conditions.

**Special Fire Fighting Instruction:** Do not enter area without personal protective equipment. Exposure to decomposition products may be a hazard to health. Wear self-contained breathing apparatus, if necessary. Use water spray for cooling exposed containers. Do not allow run-off from fire-fighting to enter drains or water sources.

## 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. Use appropriate personal protection equipment.

**Environmental precautions:** Prevent material from entering sewers, waterways, or low areas. Should not be released into the environment.

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

## 7. HANDLING AND STORAGE

**Handling:** Avoid exposure. 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. When using do not eat, drink, or smoke. Avoid contact with skin, eyes or clothing. Wash thoroughly after handling. Container is hazardous when empty.

**Storage Conditions:** Store tightly sealed in a clean, dry place that is well ventilated. Do not store in temperatures that exceed 125°F/52°C. Avoid reducing agents, strong acids, strong bases and strong oxidizers.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits:

1,1,1,2,2,3,4,5,5,5-Decafluoropentane  
Trans,1,2-Dichloroethylene  
Methanol  
N-Methyl-2-Pyrrolidone

### TLV (ACGIH)

Not Established  
200 ppm, TWA  
200 ppm, TWA  
Not Established

### PEL (OSHA)

Not Established  
200 ppm, 8 Hr. TWA  
200 ppm, 8 Hr, TWA  
Not Established

**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. Provide adequate ventilation to maintain vapor exposures below recommended limits. Wear suitable respiratory protection, when ventilation is insufficient. 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/protective clothing that impervious to this material. Discard gloves and clothing that show signs of wear.

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Boiling Point:** (Initial): 118°F/48°C

**Percent Volatile by Volume:** 100%

**Density:** 1.25 g/cc at 77°F/25°C

**Vapor Pressure:** 214 mm Hg at 68°F/20°C

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

**Solubility in H<sub>2</sub>O :** N.A.

**pH Information:** Neutral

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

**Form:** Liquid

**Appearance:** Clear

**Color:** Colorless

**Odor:** Ethereal

## 10. STABILITY AND REACTIVITY

**Reactivity:** Hazardous reactions will not occur if stored and applied as directed.

**Chemical stability:** Stable at normal ambient conditions.

**Possibility of hazardous reactions:** Hazardous polymerization will not occur.

**Material and Conditions to Avoid:** Direct sunlight. Extremely high and low temperatures. Reducing agents, Strong acids, Strong bases and Strong oxidizers.

**Decomposition:** This product can be decomposed by high temperatures (flame, glowing metal surfaces, etc.) forming Carbon oxides (CO, CO<sub>2</sub>), Hydrogen Chloride, Hydrogen fluoride, Carbonyl fluoride, Hydrocarbons, and Nitrogen compounds

## 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.

### 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.

### Methanol

**Inhalation Acute toxicity:** 3mg/l, 4 hours, animals (unspecified species)

**Dermal Acute toxicity:** 300 mg/kg, (estimated in humans)

**Oral Acute Toxicity:** 300 mg/kg, (estimated in humans)

**Skin Corrosion/Irritation:** No irritation, Rabbit

**Serious Eye Irritation/ Eye Irritation:** No irritation, Rabbit

**Skin sensitization:** Not classified based on available information.

**Respiratory Sensitization:** Not classified based on available information.

**Germ Cell Mutagenicity:** Genotoxicity in vivo and vitro tests were negative.

**Carcinogenicity:** Not classified based on available information.

**Reproductive Toxicity:** Not classified based on available information.

**STOT-single exposure:** May cause damage to organs (Eyes, Central Nervous System)

**STOT-repeated exposure:** NOEL (90 days, Inhalation) in rats: 1.06 mg/l

**Aspiration toxicity:** Not classified based on available information.

## **N-Methyl-2-Pyrrolidone**

### **Acute Toxicity:**

**Oral:** LD50: 4,150 mg/kg in rats

**Dermal:** LD50: 8,000 mg/kg in rabbits

**Inhalation:** 4 hours LC50: >5.1 mg/l in rats

**Skin Corrosion/Irritation:** May cause skin irritation and/or dermatitis. Repeated exposure may cause skin dryness and cracking.

**Serious Eye Irritation/ Eye Irritation:** Causes serious eye irritation. Irritation to eyes, reversing 7 to 21 days.

**Skin sensitization:** Not classified based on available information.

**Respiratory Sensitization:** Not classified based on available information.

**Germ Cell Mutagenicity:** Genotoxicity in vivo and vitro tests were negative.

**Carcinogenicity:** Not classified based on available information.

**Reproductive Toxicity:** May damage fertility or the unborn child. Clear evidence of adverse effects on sexual function and fertility, and/or on development based on animal experiments.

**STOT-single exposure:** May cause respiratory irritation.

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

**Aspiration toxicity:** Not classified based on available information.

## **12. ECOLOGICAL INFORMATION**

### **Aquatic Toxicity:**

#### **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

#### **Methanol**

96 hour LC50 in *Lepomis macrochirus* (Bluegill sunfish): 15,400 mg/l

48 hour EC50 in *Daphnia magna* (Water flea): >10,000 mg/l

96 hour EC50 in *Pseudokirchneriella subcapitata* (Green algae): 22,000 mg/l

NOEC in *Oryzias latipes* (Orange-red killfish): 15,800 mg/l

**Biodegradability:** Readily biodegradable. 95% biodegradable in 20 days

## **N-Methyl-2-Pyrrolidone**

96 hour LC50 – Bluegill sunfish (*Lepomis macrochirus*): 832 mg/l

24 hour EC50 – Water flea (*Daphnia magna*): > 1000 mg/l

72 hour EC50 – Green algae (*Desmodesmus subspicatus*): 600 mg/l

EC10 (activated sludge): 100 mg/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.

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.

**SARA 313 Regulated Chemicals:** N-Methyl-2-Pyrrolidone, Methanol

#### **State Regulations (U.S.)**

**California Proposition 65:** This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm.

#### **REACH (E.U.)**

**N-Methyl-2-Pyrrolidone** is an SVHC. It is considered to be toxic for reproduction.

## **16. OTHER INFORMATION**

### **NPCA-HMIS Ratings:**

Health - 2

Flammability - 1

Reactivity - 1

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

### **FOR INDUSTRIAL USE ONLY**

**DATE: APRIL 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.