



## 1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

**Name:** MS-470C  
D0522A  
Urethane Conformal Coating

**Product Use:** Conformal Coating

### **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:vapor): Category 4  
Skin corrosion/irritation: Category 2  
Serious eye damage/eye irritation: Category 2A.  
Respiratory Sensitization: Category 1  
Skin Sensitization: Category 1  
Reproductive toxicity: Category 2  
Specific Target Organ Toxicity (single exposure): Category 3  
Specific Target Organ Toxicity (repeated exposure): Category 2  
Aquatic Acute: Category 3  
Aquatic Chronic: Category 3

### **Label elements:**

#### **Signal word**

Danger

#### **Pictograms**



### **Hazard Statements**

Harmful if swallowed or inhaled.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause respiratory irritation.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause drowsiness or dizziness.  
Suspected of damaging fertility or the unborn child.  
May cause damage to organs through prolonged or repeated exposure.  
Harmful to aquatic life with long lasting effects.

### **Precautionary Statements**

Handle after all safety precautions have been read and understood.  
Avoid breathing mist/vapors/spray.  
Wash skin thoroughly after handling.  
Do not eat, drink, or smoke when using this product.  
Use in a well-ventilated area.  
Avoid release to the environment.  
Wear eye protection, protective clothing and protective gloves.  
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
IF ON SKIN: Wash with plenty of water. Wash contaminated clothing before reuse.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF exposed or concerned: Call a POISON CENTER or doctor/ physician.  
Rinse mouth.  
If skin irritation or rash occurs: Get medical advice/attention.  
If eye irritation persists: Get medical advice/ attention.  
If experiencing respiratory symptoms: Call a POISON CENTER, a doctor.  
Pressurized container: Do not pierce or burn, even after use.  
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.  
Dispose of contents/ container in accordance with local, regional, national regulations.

### **Other Hazards**

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. In high concentrations asphyxiation may occur. Symptoms may include loss of mobility/unconsciousness. Victim may not be aware of asphyxiation. 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 and then used. Effects of breathing high concentrations of vapor may include: Tiredness or drowsiness. Convulsions. 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    | 1 – 8                |
| Trans,1,2-Dichloroethylene                           | 156-60-5       | 55 – 65              |
| Toluene  | 108-88-3       | 2 – 10               |
| Xylene   | 1330-20-7      | 1 – 3                |
| 1-Methoxy-2-propanol acetate                         | 108-65-6       | 1 – 6                |
| Ethyl benzene  | 100-41-4       | < 1                  |
| Toluene Diisocyanate                                 | 26471-62-5     | < 0.1                |
| 1,1,1,2-Tetrafluoroethane                            | 811-97-2       | 16 – 20              |

### 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. 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:** Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a POISON CENTER/doctor/physician if you feel unwell.

### 5. FIRE FIGHTING MEASURES

**Flammability:** This product is not flammable.

**Test Method:** Ignition distance test and Enclosed space ignition test

**Suitable Extinguishing Media:** Alcohol resistant foam, Dry chemical powder, 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 high 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, including respiratory protection. Exposure to decomposition products may be a hazard to health. Wear self-contained breathing apparatus, if necessary. Use water spray and fog 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. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure area and call for assistance of trained personnel as soon as conditions permit.

**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 inert 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 breathing vapors or mist. Use only with adequate ventilation. Avoid contact with eyes, skin, or clothing. Do not eat, drink or smoke when handling this product. Wash thoroughly after handling. Do not handle until all safety operating conditions are established and maintained.

**Storage Conditions:** Store in a clean, dry area. Do not store sources of heat, in direct sunlight or where temperatures exceed 120F/49C.

## 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-Decafluoropentane | Not Established    | Not Established    | 200 ppm, 8 & 12 Hr. TWA<br>400 ppm, Ceiling |
| Trans,1,2-Dichloroethylene          | 200 ppm, 8 Hr. TWA | 200 ppm, 8 Hr. TWA | 200 ppm, 8 & 12 Hr. TWA                     |
| Toluene                             | 20 ppm TWA         | 200 ppm, 8 Hr. TWA |   |
| Xylene                              | 100 ppm TWA        | 100 ppm TWA        |   |
| 1-Methoxy-2-propanol acetate        | Not Established    | Not Established    |   |
| Ethyl benzene                       | 20 ppm TWA         | 100 ppm TWA        |   |
| Toluene Diisocyanate                | 0.005 ppm TWA      | Not Established    |   |
| 1,1,1,2-Tetrafluoroethane           | Not Established    | Not Established    | 1000 ppm                                    |

\* 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.

Use only with adequate ventilation. Vapors are heavier than air posing a hazard of asphyxia if they are trapped in enclosed or low places.

**Eye Protection:** Wear safety glasses or coverall chemical splash goggles. An eyewash and safety shower should be nearby.

**Respiratory Protection:** Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

**Skin Protection:** Where there is potential for skin contact have available and wear as appropriate impervious gloves. Protective gloves and chemical splash goggles should be used when handling liquid.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Boiling Point:** N.A. (Aerosol)

**Percent Volatile by Volume:** 93

**Density:** 1.26 g/cc @ 77°F/25°C

**Vapor Pressure:** N.A.

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

**Solubility in H<sub>2</sub>O:** Negligible

**pH Information:** Neutral

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

**Form:** Aerosol

**Appearance:** Clear

**Color:** Colorless to light amber

**Odor:** Solvent odor

## 10. STABILITY AND REACTIVITY

**Reactivity:** Hazardous reactions will not occur under normal conditions.

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

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

**Material and Conditions to Avoid:** Direct sunlight. Extremely high and low temperatures. 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, Fluorocarbons.

## 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.

**Reproductive toxicity:** Animal testing showed no reproductive toxicity.

**Teratogenicity:** Animal testing showed no developmental toxicity.

#### Trans-1,2-Dichloroethylene

**Oral:** LD50: 7902 mg/kg in rats

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

**Inhalation:** 4 hour LC50: 95.4 mg/l in rats

**Target Organs:** Central nervous system, narcosis

**Skin irritation:** Mild skin irritation in rabbits

**Eye irritation:** Mild eye irritation in rabbits

**Repeated dose toxicity:** Inhalation, 90 days in rats: No toxicologically significant effects were found.

Oral, 90 days in rats: No toxicologically significant effects were found.

**Mutagenicity:** Did not cause genetic damage in animals.

Test on bacterial or mammalian cell cultures did not show mutagenic effects.

**Reproductive toxicity:** Animal testing showed no reproductive toxicity.

**Teratogenicity:** Animal testing showed no developmental toxicity.

#### Toluene

**Oral:** LD50: > 5,580 mg/kg in rats

**Dermal:** LD50: 12,196 mg/kg in rabbits

**Inhalation:** 4 hour LC50: 12,500 – 28,800 mg/m<sup>3</sup> in rats

**Skin corrosion/irritation:** Skin irritation – 24 hours in rabbits

**Serious eye damage/eye irritation:** No data available

**Respiratory or skin sensitization:** No data available

**Germ cell mutagenicity:** Genotoxicity in vitro – liver – DNA damage in rats

**Reproductive Toxicity:** Evidence of reproductive effects in humans.

#### Other ingredients

1-Methoxy-2-propanol acetate and Ethyl Benzene are irritants that affect the Central Nervous System (CNS). Xylene is an irritant that affects Cardiac, CNS, Kidney and Liver. Toluene Diisocyanate is corrosive, an allergen, and an irritant affecting Bone Marrow, Eyes, and Respiratory and also a mutagen. Also some evidence of carcinogenicity.

## 12. ECOLOGICAL INFORMATION

### Aquatic Toxicity:

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

96 hour LC50 in fathead minnows: 27.2 mg/l  
96 hour LC50 in rainbow trout: 13.9 mg/l  
96 hour LC50 in zebra fish: 13 mg/l  
48 hour LC50 in Daphnia magna: 11.7 mg/l  
72 hour EC50 in green algae: > 120 mg/l

#### Trans-1,2-Dichloroethylene

96 hour LC50 in bluegill sunfish: 74 mg/l  
48 hour LC50 in Daphnia magna: 79 mg/l  
96 hour EC50 in green algae: 798 mg/l

#### Toluene

96 hour LC50 in Bluegill: 74 – 340 mg/l  
96 hour LC50 in rainbow trout: 7.63 mg/l  
7 day NOEC in fathead minnow: 5.44 mg/l  
7 day LOEC in fathead minnow: 8.04 mg/l  
24 hour EC50 in Daphnia magna: 8 mg/l  
24 hour EC50 in Fresh water algae: 245 mg/l  
24 hour EC50 in green algae: 10 mg/l

## 13. DISPOSAL CONSIDERATIONS

Comply with Federal, State/Provincial and Local regulations. Remove to a permitted waste disposal facility.

## 14. TRANSPORT INFORMATION

### U.S. DOT

**Proper Shipping Name:** Consumer Commodity

**Hazard Class:** ORM-D

**Identification No.** None

**Packing Group:** None

### IATA

**Proper Shipping Name:** Aerosols, Non-Flammable

**Hazard Class:** 2.2

**Identification No.** UN1950

**Packing Group:** None

**IMDG**

**Proper Shipping Name:** Aerosols, Non-Flammable

**Hazard Class:** 2.2

**Identification No.** UN1950

**Packing Group:** None

**15. REGULATORY INFORMATION**

**U.S. Federal Regulations**

**TSCA:** All ingredients are listed in TSCA inventory.

1,1,1,2,2,3,4,5,5-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.

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

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

**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**

**REVISION DATE: MAY 2016**

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.