

## 1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

**Name:** MS-381H  
MS-381HM  
MS-381HSP  
Connector Lubricant

**Product Use:** Connector 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 2B.

Specific Target Organ Toxicity (central nervous system): Category 3.

**Label elements:**

**Signal word**

Warning

**Pictogram**



**Hazard Statements**

Causes eye irritation.

May cause drowsiness or dizziness.

**Precautionary Statements**

Do not pierce or burn, even after use.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash skin thoroughly after handling.

IF INHALED: Remove person to fresh air and keep 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 eye irritation persists: Get medical advice/attention.

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

Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

### 3. INGREDIENTS

<u>Material (s)</u>	<u>CAS No.</u>	<u>Approximate %</u>
1,2-Trans-dichloroethylene	156-60-5	38 – 42
Methyl Nonafluorobutyl Ether	163702-07-6	3 – 18
Methyl Nonafluoroisobutyl Ether	163702-08-7	20 – 36
1,1,1,2-Tetrafluoroethane	811-97-2	18 – 22

### 4. FIRST AID MEASURES

**Inhalation:** Remove patient to fresh air. If you feel unwell, get medical attention.

**Eye:** Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

**Skin:** Remove contaminated clothing. Wash with soap and water. If you feel unwell, get medical attention. Wash contaminated clothing and shoes before reuse.

**Oral:** Rinse mouth. Never give anything by mouth to an unconscious person. If you feel unwell, get medical attention.

**Most important symptoms and effects, both acute and delayed:** Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

### 5. FIRE FIGHTING MEASURES

**Flammability:** This product is not flammable.                      **Test Method:** Ignition distance test and Enclosed space ignition test.

**Extinguishing Media:** Material will not burn. Use a fire fighting agent suitable for surrounding fire.

**Special hazards arising from the substance or mixture:** Exposure to extreme heat can give rise to thermal decomposition. May form flammable/explosive vapor air mixture.

#### **Hazardous Decomposition or By-Products**

<b>Substance</b>	<b>Condition</b>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Hydrogen Fluoride	During Combustion

**Special Fire Fighting Instruction:** Water spray may be used to cool fire exposed containers and structures until fire is out if can be done with minimal risk. Exposure to extreme heat can give rise to thermal decomposition and Self-contained breathing apparatus (SCBA) and full protective equipment are required.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Keep away from sparks, flames, and extreme heat. Evacuate area. Ventilate area with fresh air. If a large amount of aerosols rupture and spill in confined areas, provide mechanical ventilation to disperse the vapors.

**Environmental precautions:** Contain spill. Prevent entry into sewer systems or bodies of water.

**Methods and material for containment and cleaning up:** Ventilate area with fresh air. Absorb spill with vermiculite or commercially available inorganic absorbent material. Collect as much of the spilled material as possible and place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

## 7. HANDLING AND STORAGE

**Handling:** Do not breathe thermal decomposition products. Use in a well-ventilated area to avoid breathing vapors. Use only with adequate ventilation. Where ventilation is inadequate, use appropriate respiratory protection. Avoid contact with skin or eyes. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Avoid release in the environment. Avoid contact with oxidizing agents (chlorine, chromic acid etc.) Keep away from sparks, flames, and extreme heat.

**Storage Conditions:** Store in a clean, dry well-ventilated place. Do not store sources of heat or in direct sunlight or where temperatures exceed 50°C/122°F.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Exposure Limits:</u>	<u>TWA ( ACGIH)</u>	<u>TWA (OSHA)</u>	<u>TWA (AIHA)</u>
1,2-Trans-Dichloroethylene	200 ppm	200 ppm	
Methyl Nonafluorobutyl Ether	Not Established	Not Established	750ppm
Methyl Nonafluoroisobutyl Ether	Not Established	Not Established	750 ppm
1,1,1,2-Tetrafluoroethane	Not Established	Not Established	

**Respiratory Protection:** Avoid breathing vapors, mists or spray. If necessary to keep exposure limits below permissible limits, use NIOSH approved respirators, such as an air-purifying respirator for organic vapors. 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 chemically resistant to this material when prolonged or frequently repeated contact occurs. Gloves made of Neoprene are recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Boiling Point:** N.A.

**Percent Volatile by Volume:** 99%

**Density:** 1.37 gm/cc at 70°F/21°C

**Vapor Pressure:** 383 mmHg @77°F 25°C

**Vapor Density (Air=1):** >1

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

**pH Information:** Neutral

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

**Form:** Aerosol

**Appearance:** Clear

**Color:** Clear-Colorless

**Odor:** Slight odor

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable.

**Material and Conditions to Avoid:** Exposure to elevated temperatures. Strong bases and strong oxidizing agents.

**Hazardous Decomposition products:** Carbon monoxide, Carbon dioxide, Hydrogen Chloride, Hydrogen-Fluoride, Perfluoroisobutylene (PFIB), toxic vapors, gases or particulate may be products of thermal decomposition. (See section 5 for hazardous decomposition products during combustion).

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

### Methyl Nonafluorobutyl Ether

#### Acute Toxicity

**Dermal:** LD50 Estimated to be > 5,000 mg/kg

**Ingestion:** LD50 > 5,000 mg/kg, Rat

**Inhalation:** LC50 > 1,000 mg/l, 4 h, Rat

**Skin Corrosion/Irritation:** No significant irritation in Rabbits.

**Serious Eye Damage/Irritation:** No significant irritation 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:** Data not available or insufficient for classification.

**Reproductive and/or Developmental Toxicity:** Not classified to female or male reproduction in rats by inhalation (Test results- NOAEL 129 mg/l, exposure 1 generation). Not classified for development in rats by inhalation (Test results - NOAEL 307 mg/l, during gestation).

**Single Dose Toxicity:** In Dogs, not classified by inhalation on the nervous system (Test results – LOAEL 913 mg/l, exposure 10 mins) and cardiac sensitization (Test results - NOAEL 913 mg/l, exposure 10 mins).

**Repeated Dose Toxicity:** In Rats, not classified by inhalation on bone, teeth, nails and/or hair (Test results – NOAEL 129 mg/l, exposure 11 weeks) or on liver, heart, skin, endocrine, immune, hematopoietic, nervous, respiratory systems, gastrointestinal tract, muscles, eyes, kidney, and/or bladder (Test results – NOAEL 155 mg/l, exposure 13 weeks). And in Rats, not classified by ingestion on liver, heart, endocrine, immune, hematopoietic, nervous, respiratory systems, eyes, kidney, and/or bladder (Test results – NOAEL 1000 mg/kg/day, exposure 28 days).

**Aspiration Hazard:** Data not available or insufficient for classification.

### Methyl Nonafluoroisobutyl Ether

#### Acute Toxicity

**Dermal:** LD50 Estimated to be > 5,000 mg/kg

**Ingestion:** LD50 > 5,000 mg/kg, Rat

**Inhalation:** LC50 > 1,000 mg/l, 4 h, Rat

**Skin Corrosion/Irritation:** No significant irritation in Rabbits.

**Serious Eye Damage/Irritation:** No significant irritation 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:** Data not available or insufficient for classification.

**Reproductive and/or Developmental Toxicity:** Not classified to female or male reproduction in rats by inhalation (Test results- NOAEL 129 mg/l, exposure 1 generation). Not classified for development in rats by inhalation (Test results - NOAEL 307 mg/l, during gestation).

**Single Dose Toxicity:** In Dogs, not classified by inhalation on the nervous system (Test results – LOAEL 913 mg/l, exposure 10 mins) and cardiac sensitization (Test results - NOAEL 913 mg/l, exposure 10 mins).

**Repeated Dose Toxicity:** In Rats, not classified by inhalation on bone, teeth, nails and/or hair (Test results – NOAEL 129 mg/l, exposure 11 weeks) or on liver, heart, skin, endocrine, immune, hematopoietic, nervous, respiratory systems, gastrointestinal tract, muscles, eyes, kidney, and/or bladder (Test results – NOAEL 155 mg/l, exposure 13 weeks). And in Rats, not classified by ingestion on liver, heart, endocrine, immune, hematopoietic, nervous, respiratory systems, eyes, kidney, and/or bladder (Test results – NOAEL 1000 mg/kg/day, exposure 28 days).

**Aspiration Hazard:** Data not available or insufficient for 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.

## **12. ECOLOGICAL INFORMATION**

### **Trans-1,2-Dichloroethylene**

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

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

48 hour EbC50 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

## **13. DISPOSAL CONSIDERATIONS**

Comply with federal, state and local regulations. Remove to a permitted waste disposal facility. Do not puncture or incinerate cans. Empty aerosol cans before disposal.

#### 14. TRANSPORT INFORMATION

##### U.S. DOT

Limited Quantity

##### 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.

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

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

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

**SARA 313 Regulated Chemicals:** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**California Proposition 65:** This product does not contain chemicals 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 - 0

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

**FOR INDUSTRIAL USE ONLY**

**REVISION DATE: AUGUST 18, 2023**

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.