1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-381H
MS-381HM
Msa-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
Symbols
Exclamation mark

Pictograms

Hazard Statements
Causes eye irritation.
May cause drowsiness or dizziness.

Precautionary Statements
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use in a well-ventilated area.
Wash thoroughly after handling.
Pressurized container: Do not pierce or burn, even after use.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Inhalation: Remove person to fresh air and keep comfortable for breathing.
Eye: 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.

3. INGREDIENTS

Material (s)	CAS No.	Approximate %
1,1,1,2-Tetrafluoroethane	811-97-2	18 – 22
1,2-Trans-dichloroethylene	156-60-5	38 – 42
Methyl Nonafluorobutyl Ether	163702-07-6	7 – 32
Methyl Nonafluoroisobutyl Ether	163702-08-7	7 – 32
Polyphenyl Ether	3705-62-2	1 – 2

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air. 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. If signs/symptoms persist, get medical attention.

Skin: Remove contaminated clothing. Wash with soap and water. Get medical attention if necessary. Wash contaminated clothing and shoes before reuse.

Oral: Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention.

Notes to Physician: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

Flammability: This product is not flammable.

Extinguishing Media: Non-combustible. Use a fire fighting agent suitable for surrounding fire such as water or foam to extinguish.

Special hazards arising from the substance or mixture: Exposure to extreme heat can give rise to thermal decomposition.
Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	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

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. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Contain spill. Prevent entry into sewer systems or bodies of water. 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.

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. 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.)

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

Exposure Limits:	TWA (ACGIH)	TWA (OSHA)	TWA (AIHA)
1,2-Trans-Dichoroethylene	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 Fluoroelastomer or Polymer laminate are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N.A.

Density: 1.37 gm/cc at 70^{O}F/21^{O}C

Vapor Density (Air=1): >1

pH Information: Neutral

Form: Aerosol

Color: Clear-Colorless

Percent Volatile by Volume: 99%

Vapor Pressure: 383 mmHg @25^{O}C

Solubility in H_2O: Slight

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

Appearance: Clear

Odor: Slight odor

10. STABILITY AND REACTIVITY

Stability: Stable.

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

Decomposition: 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).

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Methyl Nonafluorobutyl Ether

Acute Toxicity
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 toxic to female or male reproduction in rats. Some positive developmental data exist, but the data are not sufficient for classification.
Repeated Dose Toxicity: In Rats, some positive data exists, on the following organs: Liver, bone, nails and/or hair and Endocrine System, but not sufficient for classification.
Single Dose Toxicity: In Dogs, some positive data exists on the nervous system, but not sufficient for classification.
Aspiration Hazard: Not an aspiration hazard

Methyl Nonafluoroisobutyl Ether

Acute Toxicity
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 toxic to female or male reproduction in rats. Some positive developmental data exist, but the data are not sufficient for classification.
Repeated Dose Toxicity: In Rats, some positive data exists, on the following organs: Liver, bone, nails and/or hair and Endocrine System, but not sufficient for classification.
Single Dose Toxicity: In Dogs, some positive data exists on the nervous system, but not sufficient for classification.
Aspiration Hazard: Not an aspiration hazard

Trans-1,2-Dichloroethylene

Oral: LD50: 7902 mg/kg in rats
Dermal: LD50: > 5,000 mg/kg in rabbits
Inhalation: 4 hour LC50: 95.6 mg/l in rats
Target Organs: Central nervous system depression
Inhalation Low Observed: 250000 ppm in rats
Skin Corrosion/Irritation: Minimal irritation in Rabbits
Serious Eye Damage/Irritation: Moderate irritation in Rabbits
Sensitization Skin: Data not available or insufficient for classification
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 toxic to female or male reproduction in rats. Some positive developmental data exist, but the data are not sufficient for classification.
Repeated Dose Toxicity: In Rats, some positive data exists, on the following organs: kidney and/or bladder, blood and liver, but not sufficient for classification.
Single Dose Toxicity: In Human, some positive data exists causing central nervous system depression and respiratory irritation, but not sufficient for classification.
Aspiration Hazard: Not an aspiration hazard

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

Methyl Nonafluorobutyl Ether
Methyl Nonafluoroisobutyl Ether

Test Organism	Test Type	Result
Fathead Minnow (Pimephales promelas)	96 hours LC 50	> 7.9 mg/L
Green algae (Selenastrum capricornutum)	96 hours Inhibitory Conc. 50%	> 8.9 mg/L
Water flea (Daphnia magna)	48 hours Effect Conc. 50%	>10 mg/L

Trans-1,2-Dichloroethylene

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

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
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.

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: SEPTEMBER 2015