1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-124H
DPMS D0521A
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.
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.

3. INGREDIENTS

Material (s)	CAS No.	Approximate %
1,1,1,2-Tetrafluoroethane	811-97-2	18 – 22
1,2-Trans-dichloroethylene	156-60-5	68 – 75
Methyl Nonafluorobutyl Ether	163702-07-6	1 – 7
Methyl Nonafluoroisobutyl Ether	163702-08-7	1 – 7
Polyphenyl Ether	2455-71-2	1 – 2

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air. Get medical attention if necessary.

Eye: Flush with large amounts of water, lifting eyelids until no evidence of the chemical remains. 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. 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. **Test Method:** Ignition distance test and Enclosed space ignition test

Autoignition Temperature: Not Determined **Flammable Limits in Air, % by Vol.:** None detected

Decomposition temperature: Not available

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: 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

Safeguards (Personnel): Evacuate personnel to safe area. Ventilate area, especially low or enclosed places where heavy vapors might collect. If using mechanical ventilation to disperse the vapors: Warning! The motor could be an ignition source and cause flammable gases or vapors in the spill area to burn. 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. Do not allow contact with soil, surface or ground water.

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: Do not breathe thermal decomposition products. Avoid skin contact with hot material. Do not use in a confined area with minimal air exchange. Store work clothes separately from other clothing, food and tobacco products. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of hazardous decomposition products.

Storage Conditions: Store in well-ventilated area. Do not store near sources of heat, in direct sunlight or where temperatures exceed $120^{O}F/49^{O}C$.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N.A.

Density: 1.27 gm/cc

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

pH Information: N.A.

Form: Aerosol

Color: Clear-Colorless

Percent Volatile by Volume: 99%

Vapor Pressure: 405 mmHg at 77^{O}F/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
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 11weeks) or on liver, heart, skin, endocrine, immune, hematopoietic, nervous, respiratory systems, 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 11weeks) or on liver, heart, skin, endocrine, immune, hematopoietic, nervous, respiratory systems, 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
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 Irritaion/ 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.

12. ECOLOGICAL INFORMATION

Trans-1,2-Dichloroethylene

96 hour LC50 in Lepomis marochirus (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

13. DISPOSAL CONSIDERATIONS

Comply with federal, state 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.

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: MARCH 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.