1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-738
MS-738M
DPMS U1118A1
ODC-Free Contact Re-Nu & Lube

Product Use: Lubricate & clean contacts.

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 2A.
Specific target organ toxicity, single exposure: Category 3

Label elements:
Signal word
Warning

Pictogram

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

Prevention Statements
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Pressurized container: Do not pierce or burn, even after use.

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 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.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/ 122°F
Dispose of contents/ container to an approved waste disposal plant.

Other Hazards
Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Prolonged skin contact may defat the skin and produce dermatitis or frostbite. Misuse or intentional inhalation abuse may lead to death without warning symptoms, due to cardiac effects.

3. INGREDIENTS

Material (s)	CAS No.	Approximate %
1,1,1,2-Tetrafluoroethane	811-97-2	18 – 22
Isopropyl Alcohol	67-63-0	8 – 12
Methyl Nonafluorobutyl Ether	163702-07-6	13 – 56
Methyl Nonafluoroisobutyl Ether	163702-08-7	13 – 56

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air and keep at rest comfortable for breathing. If not breathing, give artificial respiration. Give oxygen as necessary, if qualified personnel are 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. Remove contact lenses, if present and easy to do. Continue to rinse. Get medical attention if irritation develops and persists.

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. Never give anything by mouth to an unconscious person. Call a physician.

Most important symptoms/effects, acute and delayed: Causes serious eye irritation.

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, Carbon dioxide (CO2)

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. Product is not explosive. Hazardous reaction will not occur under normal conditions.

Special Fire Fighting Instruction: In the event of fire, use personal protective equipment. Wear self-contained breathing apparatus, if necessary. Exposure to decomposition products may be a hazard to health.

Further information: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate personnel to safe areas. Cool containers with water spray or fog. Do not allow run-off from the fire-fighting to enter drains or water sources. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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. 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: 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 ventilations is inadequate. When using do not eat, drink, or smoke. Avoid contact with skin, eyes or clothing. Wash thoroughly after handling.

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:	STEL(ACGIH)	TWA (OSHA)	TWA(AIHA)
Isopropyl Alcohol	400 ppm	400 ppm	
1,1,1,2-Tetrafluoroethane	Not Established	Not Established	
Methyl Nonafluorobutyl Ether	Not Established	Not Established	750ppm
Methyl Nonafluoroisobutyl Ether	Not Established	Not Established	750 ppm

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. 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 impervious to this material when prolonged or frequently repeated contact occurs.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N.A.

Density: 1.41 gm/cc at 70^{O}F/21^{O}C

Vapor Density (Air=1): >1

pH Information: N.A.

Form: Aerosol

Color: Clear-Colorless

Percent Volatile by Volume: 99%

Vapor Pressure: 207 mmHg

Solubility in H_2O: Slight (less than 10%)

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

Appearance: Clear

Odor: Slight alcohol

10. STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

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 Hydrogen fluoride, Perfluoroisobutylene (PFIB), Toxic vapors, Toxic gases and Toxic fumes.

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

Isopropyl Alcohol

Acute Toxicity
Ingestion: LD50, Rat 4,700 - 5,800 mg/kg.
Skin Absorption: LD50, Rabbit 13,000 mg/kg
Inhalation: LC50, Rat, 16,000 ppm
Skin Corrosion/Irritation: Mild skin irritation in rabbits.
Serious Eye Irritaion/ Eye Irritation: Eye irritation, 24 h, in rabbits.
Skin Sensitization: No data available
Respiratory Sensitization: No data available
Germ Cell Mutagenicity: No data available
Carcinogenicity: Not classified based on available information.
Reproductive toxicity: No data available
STOT-single exposure: Inhalation, Oral – May cause drowsiness and dizziness.
STOT-repeated exposure: No data available
Aspiration toxicity: No data available.

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

Isopropyl Alcohol

Ecotoxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Aquatic: Fish: 96 hour LC50 in Bluegill (Lepomis macrochirus): > 1400 mg/l
Persistence and degradability: No date is available on the degradability of this product.
Bioaccumulative potential: Partition coefficient n-octanol/ water (log Kow): 0.05
Mobility in soil: No data available.

13. DISPOSAL CONSIDERATIONS

If recycling is not practicable, dispose of in compliance with local regulations. Remove to a permitted waste disposal facility. The product should not be allowed to enter drains, water courses or the soil.

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