



## 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.

### **Label elements:**

#### **Signal word**

Warning

#### **Pictogram**



### **Hazard Statements**

Causes serious eye irritation.

### **Prevention Statements**

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

Wash thoroughly after handling.

Use only in a well-ventilated area.

Wear eye protection, protective clothing and protective gloves

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.

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 to an approved waste disposal plant.

#### **Other Hazards**

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Exposure may aggravate those with pre-existing eye, skin or respiratory conditions. Prolonged skin contact may defat the skin and produce dermatitis. Upon thermal decomposition, this material produces extremely toxic vapors, gases and particulates. Misuse or intentional inhalation abuse may lead to death without warning.

### **3. INGREDIENTS**

<u>Material (s)</u>	<u>CAS No.</u>	<u>Approximate %</u>
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
Synthetic Lubricant		1 – 3

### **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:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.

**Most important symptoms/effects, acute and delayed:** Causes serious eye irritation. May cause skin irritation. Repeated exposure may cause skin dryness and cracking.

### **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/tanks 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

<u>Exposure Limits:</u>	<u>STEL(ACGIH)</u>	<u>TWA (OSHA)</u>	<u>TWA(AIHA)</u>
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.

**Percent Volatile by Volume:** 99%

**Density:** 1.41 gm/cc at 70°F/21°C

**Vapor Pressure:** 207 mmHg

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

**Solubility in H<sub>2</sub>O:** Slight (less than 10%)

**pH Information:** N.A.

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

**Form:** Aerosol

**Appearance:** Clear

**Color:** Clear-Colorless

**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

### Animal Data

#### 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

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**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. Approximate. Lethal Dose, Human 100 ml

### Skin Absorption

LD50, Rabbit 13,000 mg/kg

### Inhalation

LC50, 8 h, Vapor, Rat, female 19,000 ppm

### Sensitization Skin

Did not demonstrate the potential for contact allergy in mice.

### Repeated Dose Toxicity

In animals, effects have been reported on the following organs: Liver. Kidney. Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. Observations in animals include: Lethargy.

### Chronic Toxicity and Carcinogenicity Inhalation:

Did not cause cancer in laboratory animals.

### Developmental Toxicity

Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

### Reproductive Toxicity

In animal studies, did not interfere with reproduction.

### Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative

## 12. ECOLOGICAL INFORMATION

### Aquatic Toxicity:

#### Methyl Nonafluorobutyl Ether

#### Methyl Nonafluoroisobutyl Ether

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

## Isopropyl Alcohol

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

### Fish Acute & Prolonged Toxicity

LC50, fathead minnow (*Pimephales promelas*), flow-through, 96 h: 9,640 - 10,400 mg/l

### Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, 48 h, immobilization: 7,550 - 13,299 mg/l

### Aquatic Plant Toxicity

EC50, alga *Scenedesmus* sp., Growth rate inhibition, 72 h: > 1,000 mg/l

### Toxicity to Micro-organisms

EC50; activated sludge, respiration inhibition: > 1,000 mg/l

### 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: SEPTEMBER 2015**

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.