



## 1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

**Name:** MS-720L  
J0913A  
Precision Cleaning Solvent

**Product Use:** Precision Cleaning Solvent

### **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**

Flammable aerosol: Category 2  
Eye Irritation: Category 2A

### **Label elements:**

**Signal word**  
Warning

### **Pictograms**



### **Hazardous warnings**

Flammable aerosol  
Causes serious eye irritation

### **Precautionary Statements**

Keep away from heat/sparks/open flames/hot surfaces – No smoking.  
Do not spray on an open flame or other ignition source.

Wash skin thoroughly after handling.  
Wear protective gloves/eye protection/face protection.  
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.

### 3. INGREDIENTS

| <u>Material (s)</u>                   | <u>CAS No.</u> | <u>Approximate %</u> |
|---------------------------------------|----------------|----------------------|
| Trans-1-Chloro-3,3,3-trifluoropropene | 102687-65-0    | 65 – 70              |
| Isopropyl Alcohol                     | 67-63-0        | 10 – 15              |
| Trans-1,3,3,3-Tetrafluoroprop-1-ene   | 29118-24-9     | 18 – 22              |

### 4. FIRST AID MEASURES

**Inhalation:** Remove patient to fresh air. If not breathing, give artificial respiration. Give oxygen as necessary, if qualified person 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. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have a victim lean forward to reduce the risk of aspiration.

**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 flammable.

**Test Method:** Ignition distance test and Enclosed space ignition test

**Suitable Extinguishing Media:** Alcohol resistant foam, Dry chemical, Carbon dioxide (CO<sub>2</sub>)

**Unsuitable extinguishing media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

**Special hazards:** Hazardous reaction will not occur under normal conditions. Keep containers cool by spraying with water.

**Special Fire Fighting Instruction:** In the event of fire, wear self-contained breathing apparatus and other protective clothing to prevent contact with the skin and eyes.

**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

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Avoid breathing vapors, mist or gas. Evacuate personnel to safe area. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors accumulate in low areas. In case of insufficient ventilation, wear suitable respiratory equipment.

**Environmental precautions:** If containers rupture, prevent material from entering sewers, waterways, or low areas. Should not be released into the environment.

**Methods and materials for containment and clean up:** Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and put the material into a convenient waste disposal container for disposal according to local 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 ventilation is inadequate. When using do not eat, drink, or smoke. Avoid contact with skin, eyes or clothing. Wash thoroughly after handling. Avoid release to the environment. Keep away from heat, sparks, and open flame. Take measures to prevent the buildup of electrostatic charge.

**Storage Conditions:** Store in a clean, cool and dry area that is well-ventilated. Do not store sources of heat, in direct sunlight or where temperatures exceed 120°F/49°C. Do not pierce or burn, even after use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits:

Trans-1,3,3,3-Tetrafluoroprop-1-ene  
Trans-1-Chloro-3,3,3-trifluoropropene  
Isopropyl Alcohol

### TWA (ACGIH)

Not Established  
Not Established  
200 ppm , TWA

### PEL (OSHA)

Not Established  
Not Established  
400 ppm, 8 Hr. TWA

Use only with adequate ventilation.

Vapors are heavier than air posing a hazard of asphyxia if they are trapped in enclosed or low places. Mechanical ventilation should be used in these areas.

**Respiratory Protection:** Avoid breathing vapors, mists or spray. Use with mechanical ventilation especially for enclosed or low places. Local exhaust should be used when large amounts are released. Warning! The motor could be an ignition source and cause flammable gases or vapors in the spill area to burn. If necessary to keep exposure limit below permissible limits, use NIOSH approved respirators. In poorly ventilated areas, use an approved self-contained breathing apparatus.

**Eye Protection:** Avoid eye contact. Use chemical splash 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.

**Hygiene Measures:** Avoid breathing vapors, and mist. Avoid contact with skin and eyes. Provide adequate ventilation, especially in confined areas. Wash hands after handling.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Boiling Point:** N.A.

**Percent Volatile by Volume:** 100%

**Density:** 1.17 g/cc at 54°F/12.2°C

**Vapor Pressure:** N.A.

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

**Solubility in H<sub>2</sub>O:** N.A.

**pH Information:** Neutral

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

**Form:** Aerosol

**Appearance:** Clear

**Color:** Clear-Colorless

**Odor:** Slight alcohol odor

## 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:** Heat, sparks, and flames. Exposure to elevated temperatures, direct sunlight. Avoid static discharge. Strong acids, Strong oxidizers, Alkali metals.

**Decomposition:** Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc) forming products containing Carbon monoxide, Carbon dioxide, Carbonyl halides, Gaseous hydrogen chloride, and Gaseous hydrogen fluoride.

## 11. TOXICOLOGICAL INFORMATION

### Trans-1,3,3,3-Tetrafluoroprop-1-ene (HFO-1234ze)

#### Acute Inhalation:

4 hour, LC50 rat: >207000 ppm

**Skin corrosion/irritation:** No skin irritation in rabbits. Method: OECD Test Guideline 404

**Serious eye damage/eye irritation:** No data available

**Respiratory or skin sensitization:** Cardiac sensitization

Species: Dogs

Result: Did not cause sensitization on laboratory animals.

#### Repeated dose toxicity:

13 Weeks, Inhalation, rat: Causes mild effects on the heart. NOEL 5,000 ppm

**Genotoxicity in vitro and in vivo:** In vitro tests did not show mutagenic effects.

**Reproductive toxicity:** Test Method: Two-generation study

Species: Rat. Application Route: Inhalation. NOEL: >20,000 ppm; NOEL: >20,000 ppm.

Method: OECD Test Guideline 416

**Teratogenicity:** Species: Rabbit & Rat. Method: OECD 416. Did not show teratogenic effects in animal experiments.

Species: Rat. Application Route: Inhalation. NOAEC: 15,000 ppm. Method: OECD Test Guideline 414

### **Trans-1-Chloro-3,3,3-trifluoropropene**

**Acute inhalation toxicity:** 4 hour LC50: 120000 ppm in rats.

**Skin irritation:** 4 hour OECD Test Guideline 404: No skin irritation in rabbits

Not classified as a skin irritant in animal testing.

**Sensitization:** Result: Does not cause skin sensitization.

Classification: Patch test on human volunteers did not demonstrate sensitization properties.

Cardiac sensitization threshold (dog): 25000 ppm.

**Repeated dose toxicity:** Inhalation: 4 weeks NOEL: 4500 ppm in rats

Note: Subacute toxicity

**Genotoxicity in vitro:** Mutagenicity (Salmonella typhimurium – reverse mutation assay). Result: negative

**Genotoxicity in vivo:** Species: rat & mice. Cell type: Bone marrow. Method: Mutagenicity (micronucleus test).

Result: negative

**Reproductive toxicity:** No-observed-effect level: 15,000 ppm in rabbits; 10,000 ppm in rats

**Teratogenicity:** No-observed-effect level: 15,000 ppm in rabbits; 10,000 ppm in rats

### **Isopropyl Alcohol**

**Acute Oral Toxicity:** LD50, Rat: > 5,000mg/kg

**Acute Inhalation Toxicity:** 6 hour, LC50, Rat: > 25mg/l (vapor)

**Acute Dermal Toxicity:** LD50, Rabbit: > 5,000 mg/kg

**Skin Corrosion/Irritation:** No skin irritation in rabbits

**Serious Eye Irritation/ Eye Irritation:** Eye irritation, in rabbits. Reversing in 21 days.

**Skin Sensitization:** Not classified based on available information

**Respiratory Sensitization:** Not classified based on available information

**Germ Cell Mutagenicity:** Not classified based on available information

**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:** Not classified based on available information

**Aspiration toxicity:** Not classified based on available information

## **12. ECOLOGICAL INFORMATION**

### **Trans-1,3,3,3-Tetrafluoroprop-1-ene (HFO-1234ze)**

96 hour NOEC – Cyprinus carpio (Carp): > 117 mg/L

48 hour EC50 – Daphnia magna (Water flea): > 160 mg/L

Toxicity to algae: Growth inhibition: NOEC: > 170 mg/l, Exposure time: 72 h

**Biodegradability:** Aerobic: Not readily biodegradable

### **Trans-1-Chloro-3,3,3-trifluoropropene**

#### **Ecotoxicity:**

96 hour LC50 – Oncorhynchus mykiss (rainbow trout): 38 mg/l (Method: OECD Test Guideline 203)

48 hour EC50 – Immobilization of Daphnia magna (Water flea): 82 mg/l (Method: OECD Test Guideline 202)

72 hour EC50 – Growth inhibition of Pseudokirchneriella subcapitata (green algae): 106.7 mg/l (Method: OECD Test Guideline 201)

72 hour NOEC – Growth rate of Pseudokirchneriella subcapitata (green algae): 115mg/l (Method: OECD Test Guidelines 201)

**Persistence and degradability:** Not readily biodegradable.

**Bioaccumulative potential:** Accumulation in organisms is not expected.

## **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.

**Toxic to Fish:** 96 hour, LC50 in Fathead minnow (*Pimephales promelas*): 9640 mg/l

**Toxic to daphnia and other aquatic invertebrates:** 24 hour, EC50 Water flea (*Daphnia magna*): >10,000 mg/l

**Toxic to microorganisms:** 16 hour, EC50 (*Pseudomonas putida*): >1,050 mg/l

**Persistence and degradability:** Rapidly degradable

**Bioaccumulative potential:** Partition coefficient n-octanol/ water (log Pow): 0.05

**Mobility in soil:** No data available.

### **13. DISPOSAL CONSIDERATIONS**

Comply with federal, state and local regulations. Do not puncture or incinerate cans.

### **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, Flammable

**Hazard Class:** 2.1

**Identification No.** UN1950

**Packing Group:** None

#### **IMDG**

**Proper Shipping Name:** Aerosols, Flammable

**Hazard Class:** 2.1

**Identification No.** UN1950

**Packing Group:** None

### **15. REGULATORY INFORMATION**

#### **US FEDERAL REGULATIONS:**

**TSCA:** All ingredients are listed in TSCA inventory.

#### **US STATE REGULATIONS:**

**California Proposition 65 Carcinogens and Reproductive Toxins:** None of the ingredients are listed.

## **16. OTHER INFORMATION**

### **HMIS Ratings:**

Health - 2

Flammability - 2

Reactivity - 0

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

### **FOR INDUSTRIAL USE ONLY**

### **REVISION DATE: APRIL 2019**

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.