



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
Specific target organ toxicity, single

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.

Pressurized container: Do not pierce or burn, even after use.

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.

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. Get medical attention if symptoms occur.

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.

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.

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 (CO₂)

Unsuitable extinguishing media: Do not use waterjet spray.

Specific hazards during firefighting: Vapors may ignite with air and exposed to strong ignition sources. Container may rupture on heating. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Exposure to extreme heat can give rise to thermal decomposition of Carbon oxides, Hydrogen fluoride and Carbonyl halides.

Special protective equipment for fire-fighters: 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 with water spray. Do not allow run-off from the firefighting 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: Remove all ignition sources. 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: 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 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 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.

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. 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 H₂O: 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

Chemical stability: Stable at normal temperatures and storage conditions.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

Material and Conditions to Avoid: Heat, sparks, and flames. Exposure to elevated temperatures, direct sunlight. 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

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. Study technically not feasible.

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 LC0 – Cyprinus carpio (Carp): > 117 mg/L (Method: OECD Test Guideline 203)

48 hour EC50 – Daphnia magna (Water flea): > 160 mg/L (Method: OECD Test Guideline 202)

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

Biodegradability: Aerobic: Not readily biodegradable

Bioaccumulation: No bioaccumulation is to be expected (log Pow <=4)

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): >215 mg/l (Method: OECD Test Guideline 201)

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

Biodegradability: Not readily biodegradable. Value: 0% (Method: OECD 301 D)

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

Limited Quantity

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: MARCH 2020

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.