



1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-720
MS-720M
DPMS T0120A1
Precision Cleaning Agent

Product Use: 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.
Use only non-sparking tools.
Take precautionary measures against static discharge.

Avoid breathing fumes/gas/vapor/spray.
Wash skin thoroughly after handling.
Use in a well ventilated area.
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.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
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..

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
Ethyl Nonafluorobutyl Ether	163702-05-4	14 – 56
Ethyl Nonafluoroisobutyl Ether	163702-06-5	14 – 56

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 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: No applicable data available.

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.

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel): 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.

Spill Cleanup: 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: Avoid contact with eyes, skin, or clothing. Do not inhale vapor or mist. Wash thoroughly after handling. 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

<u>Exposure Limits:</u>	<u>STEL(ACGIH)</u>	<u>PEL (OSHA)</u>	<u>TWA (3M)</u> As total isomers
Isopropyl Alcohol	400 ppm	400 ppm	
1,1,1,2-Tetrafluoroethane	Not Established	Not Established	
Ethyl Nonafluorobutyl Ether	Not Established	Not Established	200 ppm
Ethyl Nonafluoroisobutyl Ether	Not Established	Not Established	200 ppm

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.

Eye Protection: Wear safety glasses or coverall chemical splash goggles.

Respiratory Protection: Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

Skin Protection: Where there is potential for skin contact have available and wear as appropriate impervious gloves.

Do not smoke in area. Wash after handling. Do not eat or drink when using the material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N.A.

Percent Volatile by Volume: 100%

Density: 1.25 gm/cc at 70°F/21°C

Vapor Pressure: 105 mmHg at 77°F/25°C

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

Solubility in H₂O: Insoluble

pH Information: Neutral

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

Form: Liquid

Appearance: Clear

Color: Clear-Colorless

Odor: Ethereal

10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal temperatures and storage conditions.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

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

Incompatible Materials: Avoid contact with: 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

Ethyl Nonafluorobutyl Ether Ethyl Nonafluoroisobutyl Ether

Acute Inhalation Lethal Concentration: LD50 > 989 mg/l (rat, 4-hour)

Oral Toxicity: LD50 > 2000 mg/kg in 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

Repeated Dose Toxicity: In Rats, some positive data exists, on the following organs: liver, kidney and/or bladder and respiratory system, but not sufficient for classification.

Single Dose Toxicity: In Dogs, some positive data exists on cardiac sensitization, but not sufficient for classification.

Aspiration Hazard: Data not available or insufficient for classification

Isopropyl Alcohol

Acute Toxicity

Ingestion: LD50, Rat, 4,710 mg/l

Skin Absorption: LD50, Rabbit, 12,870 mg/kg

Inhalation: LC50, 4 h, Vapor, Rat, 72.6 mg/l

Skin Corrosion/Irritation: No significant irritation in multiple animal species.

Serious Eye Damage/Irritation: Serious eye irritant 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: Some positive data exists with inhalation in rats, but the data is not sufficient for classification.

Reproductive and/or Developmental Toxicity: Some positive developmental data exist in rats, but the data are not sufficient for classification.

Repeated Dose Toxicity: In Rats, some positive data exists, on the following organs: bladder and kidney, but not sufficient for classification.

Single Dose Toxicity: In Humans, some positive data exists on the nervous and respiratory systems, but not sufficient for classification. May cause drowsiness or dizziness, if ingested.

Aspiration Hazard: Not an aspiration hazard

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

Ethyl Nonafluorobutyl Ether Ethyl Nonafluoroisobutyl Ether

<u>Test Organism</u>	<u>Test Type</u>	<u>Result</u>
Fathead Minnow (Pimephales promelas)	96 hours LC 50	> 2.75 mg/L
Green algae (Selenastrum capricornutum)	96 hours Effect Conc. 50%	> 2.32 mg/L
Water flea (Daphnia magna)	48 hours Effect Conc. 50%	> 2.55 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

Recover and reclaim or recycle, if practical. Comply with Federal, State/Provincial 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, 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

U.S. Federal Regulations

TSCA: All ingredients are listed in TSCA inventory.

SARA/TITLE III HAZARD CATEGORIES:

Product Hazard Categories:

Acute Health - Yes

Chronic Health - No

Fire Hazard - Yes

Reactivity Hazard - No

Pressure Hazard - Yes

16. OTHER INFORMATION

NPCA-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: 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.