1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-750
MS-750M
Vertrel MCA Cleaning Agent
DPMS T0109A1

Product Use: Cleaning Agent

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 2B.
Specific Target Organ Toxicity (single exposure): Category 3.

Label elements:
Signal word
Warning

Pictogram

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

Prevention Statements
Do not pierce or burn, even after use.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.

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.
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.

Other Hazards
Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Rapid evaporation of the product may cause frostbite. Misuse or intentional inhalation abuse may lead to death without warning symptoms, due to cardiac effects.

3. INGREDIENTS

Material (s)	CAS No.	Approximate %
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	40 – 60
Trans,1,2-Dichloroethylene	156-60-5	20 – 40
1,1,1,2-Tetrafluoroethane	811-97-2	18 – 22

Actual concentration is withheld as a trade secret

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air, lie down. Get medical attention if necessary.

Eye: Immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Continue to rinse. Get medical attention.

Skin: Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before use. Thoroughly clean shoes before reuse. Get medical attention.

Oral: DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed: May cause cardiac arrhythmia.
Skin contact may provoke the following symptoms: Dermatitis, Discomfort, Pain, Superficial burning sensation, Redness, Rash, Itching, Swelling of tissue, Irritation
Eye contact may provoke the following symptoms: Pain, Tearing, Swelling of tissue, Redness, Impairment of vision
Inhalation may provoke the following symptoms: Unconsciousness, Drowsiness, Lack of coordination, confusion, Dizziness, Central nervous system depression
Effects of breathing high concentrations of vapor may include: Tiredness, Drowsiness, Central nervous system effects, Convulsions
Adverse effects from repeated inhalation may include central nervous system effects
Aspiration may cause pulmonary edema and pneumonitis. Causes eye irritation. May cause drowsiness or dizziness.

Notes to Physician: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

5. FIRE FIGHTING MEASURES

Flammability: This product is not flammable. **Test Method:** Ignition distance test and Enclosed space ignition test

Suitable Extinguishing Media: Water spray, Water mist, Dry chemical, Carbon dioxide (CO2)

Unsuitable extinguishing media: None known.

Special hazards: Exposure to combustion products may be hazardous to health. Hazardous combustion products: Hydrogen fluoride, Carbonyl fluoride, Carbon oxides, Chlorine compounds.

Special Fire Fighting Instruction: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

Further information: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate personnel to safe areas. Cool cans with water spray. 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: Evacuate personnel to safe area. Ventilate area, especially low or enclosed places where heavy vapors might collect. Use personal protective equipment.

Environmental precautions: If cans rupture, prevent material from entering sewers, waterways, or low areas. Should not be released into the environment. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and clean up: Contain spillage, and then collect with inert absorbent 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. 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. Take care to prevent spills and minimize release to the environment.

Storage Conditions: Store in a well-ventilated, cool, dry area. Do not store sources of heat, in direct sunlight or where temperatures exceed 120F/49C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:	TLV (ACGIH)	PEL (OSHA)
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	Not Established	Not Established
Trans,1,2-Dichloroethylene	200 ppm, TWA	200 ppm, TWA
1,1,1,2-Tetrafluoroethane	Not Established	Not Established

Respiratory Protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

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 (eg. Viton). For special applications, we recommend clarifying the resistance to chemicals of the protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N.A.

Density: 1.41 g/cc @ 77°F/25°C

Vapor Density (Air=1): 5.4

pH Information: N.A.

Form: Aerosol

Color: Colorless

Percent Volatile by Volume: 100

Vapor Pressure: 464 mmHg @ 77°F/25°C

Solubility in H_2O: Slight

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

Appearance: Clear & Colorless

Odor: Ether-like

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: None known.

Material and Conditions to Avoid: None known.

Decomposition: No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

Information on likely routes of exposure: Inhalation, Skin contact, Ingestion, Eye contact
Acute Oral: LD50: > 5000 mg/kg in rats. Method: OECD Test Guideline 401
Acute Inhalation (vapor): 4 hour LC50: 114.428 mg/l in rats. Method: OECD Test Guideline 403
Acute Dermal: LD50: > 5000 mg/kg in rabbits. Method: OECD Test Guideline 402
Skin Corrosion/Irritation: No skin irritation in rabbits. Method: OECD Test Guideline 404
Serious Eye Irritation/ Eye Irritation: No eye irritation in rabbits. Method: OECD Test Guideline 405
Skin Sensitization: No skin sensitization in Guinea pigs. Buehler Test. Method: OECD Test Guideline 406
Respiratory Sensitization: Not classified based on available information.
Germ Cell Mutagenicity: Weight of evidence does not support classification as a germ cell mutagen.
Carcinogenicity: Not classified based on available information.
Reproductive toxicity: Weight of evidence does not support classification for reproductive toxicity.
STOT-single exposure: Inhalation (vapor): No significant health effects observed in animals at concentrations of 20mg/l/4h or less.
STOT-repeated exposure: Inhalation (vapor): No significant health effects observed in animals at concentrations of 1mg/l/6h/d or less.
Aspiration toxicity: No aspiration toxicity classification.

Trans-1,2-Dichloroethylene

Acute Oral: LD50: 7902 mg/kg in rats. Method: OECD Test Guideline 420
Acute Dermal: LD50: > 5,000 mg/kg in rabbits. Method: OECD Test Guideline 402
Acute Inhalation: 4 hour LC50: 95.5 mg/l in rats. Test atmosphere: vapor. Method: OECD Test Guideline 403
Skin Corrosion/Irritation: Mild skin irritation in rabbits. Method: OECD Test Guideline 404
Serious Eye Irritation/Eye Irritation: Eye irritation in rabbits. Reversing within 7 days. Method: OECD Test Guideline 405
Skin Sensitization: Not classified based on available information.
Respiratory Sensitization: Not classified based on available information.
Germ Cell Mutagenicity: Evidence does not support classification of a germ cell mutagen.
Carcinogenicity: Not classified based on available information.
Reproductive toxicity: Test Type: Embryo-fetal development. Inhalation in rats. Negative. Method: OECD Test Guideline 414
STOT-single exposure: May cause drowsiness and dizziness.
STOT-repeated exposure: Inhalation: No significant health effects observed in animals at concentrations of 250 ppmV/6h/d or less.
Aspiration toxicity: Not classified based on available information.

12. ECOLOGICAL INFORMATION

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

96 hour LC50 in Danio rerio (zebra fish): 13 mg/l. Method: OECD Test Guideline 203
48 hour EC50 in Daphnia magna (Water flea): 10.6 mg/l. Method: OECD Test Guideline 202
72 hour EC50 in Selenastrum capricornutum (Green algae): >120 mg/l. Method: OECD Test Guideline 201
21 days NOEC in Daphnia magna (Water flea): 1.72 mg/l. Method: OECD Test Guideline 211

Biodegradability: Not readily biodegradable. Method: OECD Test Guideline 301D
Bioaccumulative potential: Bioaccumulation is unlikely. Partition coefficient: noctanol/water: log Pow: 2.4 (75 °F / 24 °C)
Mobility in soil: No data available

Trans-1,2-Dichloroethylene

96 hour LC50 in Lepomis marochirus (Bluegill sunfish): 135 mg/l. Based on data similar materials
48 hour EC50 in Daphnia magna (Water flea): 220 mg/l. Method: EPA-660/3-75-009
48 hour EbC50 in Pseudokirchneriella subcapitata (Green algae): 36.36 mg/l. Method: OECD Test Guideline 201

Biodegradability: Not readily biodegradable. Method: OECD Test Guideline 301D
Bioaccumulative potential: Partition coefficient: n-octanol/water: log Pow: 2.06
Mobility in soil: No data available

13. DISPOSAL CONSIDERATIONS

Comply with federal, state and local regulations. Remove to a permitted waste disposal facility.

14. TRANSPORT INFORMATION

U.S. DOT
Limited Quantity

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.

1,1,1,2,2,3,4,5,5,5-Decafluoropentane (CAS# 138495-42-8) - The United States Environmental Protection Agency has established a Significant New Use Rule (SNUR; 40 CFR 721.5645) for this product. This product contains one or more substances which requires export notification under TSCA Section 12(b) and 40 CFR Part 707 Subpart D.

SARA 304 Extremely Hazardous Substances Reportable Quantity: This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity: This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards: Serious eye damage or eye irritation. Specific target organ toxicity (single or repeated exposure).

SARA 313 Regulated Chemicals: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm.

16. OTHER INFORMATION

NPCA-HMIS Ratings:

Health	- 1
Flammability	- 0
Reactivity	- 0

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: AUGUST 1, 2023