



1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-532N
DPMS-N0616B-1
Contact Re-Nu®

Product Use: Electrical Contact Cleaning

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

Label elements:

Signal word

Warning

Pictogram



Hazard Statements

Causes serious eye irritation.
May cause drowsiness or dizziness.

Prevention Statements

Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear gloves/protective clothing/eye protection/face protection.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/ physician if you feel unwell
If eye irritation persists: Get medical advice/ attention.
Store in a well-ventilated place. Keep container tightly closed.
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. Prolonged skin contact may defat the skin and produce dermatitis. May cause cardiac arrhythmia. Misuse or intentional inhalation abuse may lead to death without warning.

3. INGREDIENTS

<u>Material (s)</u>	<u>CAS No.</u>	<u>Approximate %</u>
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	22 – 30
Trans,1,2-Dichloroethylene	156-60-5	55 – 65
Isopropyl Alcohol	67-63-0	14 - 16

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air, lie down. Keep patient warm and at rest. 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 warm water after contact. 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. Give 2 glasses of water. If vomiting occurs, lean victim forward to reduce the risk of aspiration. Call a physician.

Most important symptoms/effects, acute and delayed: Dizziness

Notes to Physician: Do not give adrenaline or similar drugs. Unless in situations of emergency life support and then needs to be used with special caution.

5. FIRE FIGHTING MEASURES

Flammability: This product is not flammable. Does not flash.

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

Unsuitable extinguishing media: No applicable data available.

Special hazards: Fire or intense heat may cause violent rupture of packages. The product is not flammable. Vapors may form flammable mixture with air. Hazardous combustion products: Hydrogen fluoride, Fluorinated hydrocarbons, Carbonyl fluoride, Carbon oxides, Hydrogen chloride.

Special Fire Fighting Instruction: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire. 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. 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.

Environmental precautions: If containers rupture, 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 non-combustible 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. 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 tightly sealed in a clean, dry place, and well-ventilated place. Do not store in temperatures that exceed 125°F/52°C, because the containers could leak or rupture from pressure and expansion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Exposure Limits:</u>	<u>TLV (ACGIH)</u>	<u>PEL (OSHA)</u>
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	Not Established	Not Established
Trans,1,2-Dichloroethylene	200 ppm, TWA	200 ppm, 8 Hr. TWA
Isopropyl Alcohol	400 ppm, STEL	400 ppm, 8 Hr. TWA

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: 131°F/55°C

Percent Volatile by Volume: 100

Density: 1.26 g/cc @ 77°F/25°C

Vapor Pressure: 302 mmHg @ 77°F/25°C

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

Solubility in H₂O: N.A.

pH Information: Neutral

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

Form: Liquid

Appearance: Clear & Colorless

Color: Colorless

Odor: 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: No applicable data available.

Material and Conditions to Avoid: Open flames and high temperatures. Alkali or alkaline earth metals, Powder metals, Powdered metal salts, Nitrogen oxides, acids, bases and strong oxidizing agents.

Decomposition: This product can be decomposed by high temperatures (flame, glowing metal surfaces, etc.) forming Fluorinated hydrocarbons, Hydrogen fluoride, Carbon dioxide, Carbon monoxide, Hydrogen chloride gas, Carbonyl fluoride.

11. TOXICOLOGICAL INFORMATION

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

Information on likely routes of exposure: Inhalation, Skin contact, Ingestion, Eye contact

Acute Toxicity: Not classified based on available information.

Skin Corrosion/Irritation: Not classified based on available information.

Serious Eye Irritation/ Eye Irritation: Not classified based on available information.

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: Not classified based on available information.

STOT-repeated exposure: Not classified based on available information.

Aspiration toxicity: Not classified based on available information.

Trans-1,2-Dichloroethylene

Acute Oral: LD50: 7902 mg/kg in rats

Acute Dermal: LD50: > 5,000 mg/kg in rabbits

Acute Inhalation: 4 hour LC50: 95.4 mg/l in rats. Test atmosphere: vapor. Method: OECD Test Guideline 403

Skin Corrosion/Irritation: Mild skin irritation in rabbits

Serious Eye Irritation/ Eye Irritation: Mild eye irritation in rabbits. Reversing within 7 days.

Skin Sensitization: No data available

Respiratory Sensitization: No data available

Germ Cell Mutagenicity: Evidence does not support classification of a germ cell mutagen.

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: No significant health effects observed in animals at concentrations of 250 ppmV/6h/d or less.

Aspiration toxicity: Not classified based on available information.

Isopropyl Alcohol

Acute Toxicity

Ingestion: LD50, Rat 4,700 - 5,800 mg/kg.

Skin Absorption: LD50, Rabbit 13,000 mg/kg

Inhalation: LC50, Rat, 16,000 ppm

Skin Corrosion/Irritation: Mild skin irritation in rabbits.

Serious Eye Irritation/ Eye Irritation: Eye irritation, 24 h, in rabbits.

Skin Sensitization: No data available

Respiratory Sensitization: No data available

Germ Cell Mutagenicity: No data available
Carcinogenicity: Not classified based on available information.
Reproductive toxicity: No data available
STOT-single exposure: Inhalation, Oral – May cause drowsiness and dizziness.
STOT-repeated exposure: No data available
Aspiration toxicity: No data available

12. ECOLOGICAL INFORMATION

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

Ecotoxicity: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
Other adverse effects
Results of PBT and vPvB assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Trans-1,2-Dichloroethylene

96 hour LC50 in *Lepomis macrochirus* (Bluegill sunfish): 135 mg/l
48 hour EC50 in *Daphnia magna* (Water flea): 220 mg/l
72 hour EC50 in *Pseudokirchneriella subcapitata* (Green algae): 36.36 mg/l

Biodegradability: Not readily biodegradable. Method: OECD Test Guideline 301D

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.

Aquatic: Fish: 96 hour LC50 in Bluegill (*Lepomis macrochirus*): > 1400 mg/l
Persistence and degradability: No data is available on the degradability of this product.
Bioaccumulative potential: Partition coefficient n-octanol/ water (log Kow): 0.05
Mobility in soil: No data available.

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

Not Regulated

IATA

Not Regulated

IMDG

Not Regulated

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) is controlled by TSCA Section 5, Significant New Use Rule (SNUR; 40 CFR 721.5645) The approved uses are: precision and general cleaning, carrier fluid, displacement drying, printed circuit board cleaning, particulate removal, film cleaning, process medium, heat transfer fluid (dielectric and non-dielectric), and test fluid. Processors and users of this substance must also comply with the applicable general SNUR requirements set forth in 40 CFR 721 subpart A, including export notification requirements if applicable (40 CFR 721.20), and the applicable record keeping requirements set forth at 40 CFR 721.125.

16. **OTHER INFORMATION**

NPCA-HMIS Ratings:

Health - 1

Flammability - 0

Reactivity - 1

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: DECEMBER 2017

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.