

MATERIAL SAFETY DATA SHEET

Misty Contact & Circuit Board Cleaner IV

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Misty Contact & Circuit Board Cleaner IV
Product Number: A00369
Product Use: Specialty Cleaner.
Manufacturer/Supplier: Amrep, Inc.
990 Industrial Park Drive
Marietta, GA 30062
Phone Number: (770) 422-2071 (Mon - Fri / 8am - 5pm ET)
D.O.T. Emergency Phone: CHEM TEL (800) 255-3924
INTERNATIONAL: +01-813-248-0584
Date of Preparation: January 13, 2008 **Revision #:** 1.0

Section 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS: See Section 15

CAUTION

MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION.
CONTENTS UNDER PRESSURE. CONTAINER MAY EXPLODE IF HEATED.

Potential Health Effects: See Section 11 for more information.

Likely Routes of Exposure: Skin contact, eye contact, inhalation, and ingestion.

Eye: May cause eye irritation.

Skin: May cause skin irritation.

Ingestion: Not a normal route of exposure. Harmful: may cause lung damage if swallowed.

Inhalation: May cause respiratory tract irritation. May cause asphyxiation.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Signs and Symptoms: Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. Handling can cause dry skin. Vapours may cause drowsiness and dizziness.

Medical Conditions Aggravated By Exposure: Asthma. Allergies.

Target Organs: Skin, eyes, gastrointestinal tract, respiratory system.

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Environmental Effects: May cause long-term adverse effects in the aquatic environment. See Section 12 for more information.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS #	Wt. %
1,1,1,2-Tetrafluoroethane	811-97-2	60 - 100
Hexamethyldisiloxane	107-46-0	3 - 7
Trans-dichloroethylene	156-60-5	3 - 7
Octamethyltrisiloxane	107-51-7	1 - 5
Ethanol	64-17-5	1 - 5
Octamethylcyclotetrasiloxane	556-67-2	0.1 - 1

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Section 4: FIRST AID MEASURES

- Eye Contact:** In case of contact, immediately flush eyes with plenty of water. If easy to do, remove contact lenses, if worn.
- Skin Contact:** In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
- Ingestion:** If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or MSDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE FIGHTING MEASURES

Flammability: Not flammable by WHMIS/OSHA criteria.

Means of Extinction:

Suitable Extinguishing Media: Powder, foam, carbon dioxide.

Unsuitable Extinguishing Media: Not applicable.

Products of Combustion: May include, and are not limited to: oxides of carbon, hydrofluoric acid, hydrochloric acid, chlorine and possibly carbonyl fluoride.

Explosion Data:

Sensitivity to Mechanical Impact: Not available.

Sensitivity to Static Discharge: Not available.

Protection of Firefighters: Containers may explode when heated. Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition. Ruptured cylinders may rocket.

Environmental Precautions: Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). This material is a water pollutant. Keep out of drains, sewers, ditches, and waterways. Minimize use of water to prevent environmental contamination.

Methods for Containment: Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for Clean-Up: Vacuum or sweep material and place in a disposal container. Allow gas to dissipate harmlessly into the atmosphere.

Other Information: Not available.

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Section 7: HANDLING AND STORAGE

Handling:

Keep away from sources of ignition. No smoking. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas/fumes/vapor/spray. Use only in well-ventilated areas. Handle and open container with care. When using, do not eat or drink. Wash hands before eating, drinking, or smoking.

Storage:

Keep out of the reach of children. Keep container in a well-ventilated place. Do not store at temperatures above 49°C / 120°F.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Ingredient	Exposure Limits	
	OSHA-PEL	ACGIH-TLV
1,1,1,2-Tetrafluoroethane	Not available.	Not available.
Hexamethyldisiloxane	Not available.	Not available.
Trans-dichloroethylene	Not available.	Not available.
Octamethyltrisiloxane	Not available.	Not available.
Ethanol	1000 ppm	1000 ppm
Octamethylcyclotetrasiloxane	Not available.	Not available.

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Personal Protective Equipment:

HMIS: See Section 15

Eye/Face Protection: Wear eye/face protection.

Hand Protection: Wear suitable gloves.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear.
Color:	Colorless.
Odour:	Solvent.
Odour Threshold:	Not available.
Physical State:	Gas/Pressurized Liquid.
pH:	Not applicable.
Viscosity:	Not available.
Freezing Point:	Not available.
Boiling Point:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.

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Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	> 1 (Air = 1)
Specific Gravity:	0.88 (Liquid Concentrate)
Solubility in Water:	Insoluble.
Coefficient of Water/Oil Distribution:	Not available.
Auto-ignition Temperature:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	8.6% (US federal), 8.6% (CARB)

Section 10: STABILITY AND REACTIVITY

Stability: Stable under normal storage conditions. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn. Keep in a cool place.

Conditions of Reactivity: Heat. Incompatible materials.

Incompatible Materials: Oxidizers. Bases. Alkaline earth metals. Contact with finely powdered metals eg. Aluminum, Magnesium, Zinc.

Hazardous Decomposition Products: May include, and are not limited to: oxides of carbon, hydrofluoric acid, hydrochloric acid, chlorine and possibly carbonyl fluoride.

Possibility of Hazardous Reactions: No dangerous reaction known under conditions of normal use.

Section 11: TOXICOLOGY INFORMATION

EFFECTS OF ACUTE EXPOSURE

Component Analysis

Ingredient	LD ₅₀ (oral)	LC ₅₀
1,1,1,2-Tetrafluoroethane	Not available.	1500 gm/m ³ 4 hrs, rat
Hexamethyldisiloxane	Not available.	Not available.
Trans-dichloroethylene	1235 mg/kg, rat	24100 ppm, rat
Octamethyltrisiloxane	Not available.	Not available.
Ethanol	7060 mg/kg, rat	20000 ppm 10hrs, rat
Octamethylcyclotetrasiloxane	1540 mg/kg, rat	36000 mg/m ³ , 4hr rat

Eye: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Skin: May cause skin irritation. Handling can cause dry skin.

Ingestion: Not a normal route of exposure. Harmful: may cause lung damage if swallowed.

Inhalation: May cause respiratory tract irritation. May cause asphyxiation. Vapours may cause drowsiness and dizziness.

EFFECTS OF CHRONIC EXPOSURE

Target Organs: Not available.

Chronic Effects: (Effects due to excessive exposure to the raw materials of this mixture)
Excessive inhalation may result in central nervous system effects.

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Carcinogenicity: Not hazardous by WHMIS/OSHA criteria.

Ingredient	Chemical Listed as Carcinogen or Potential Carcinogen *
1,1,1,2-Tetrafluoroethane	Not listed.
Hexamethyldisiloxane	Not listed.
Trans-dichloroethylene	Not listed.
Octamethyltrisiloxane	Not listed.
Ethanol	Not listed.
Octamethylcyclotetrasiloxane	Not listed.

* See Section 15 for more information.

Mutagenicity: Hazardous by WHMIS/OSHA criteria.

Reproductive Effects: Hazardous by WHMIS/OSHA criteria.

Developmental Effects:

Teratogenicity: Not hazardous by WHMIS/OSHA criteria.

Embryotoxicity: Not hazardous by WHMIS/OSHA criteria.

Respiratory Sensitization: Not hazardous by WHMIS/OSHA criteria.

Skin Sensitization: Not hazardous by WHMIS/OSHA criteria.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: May cause long-term adverse effects in the aquatic environment

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions:

This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

Section 14: TRANSPORTATION INFORMATION

DOT Classification

ORM-D

TDG Classification

Limited Quantity

Section 15: REGULATORY INFORMATION

Federal Regulations

Canadian: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

US: MSDS prepared pursuant to the Hazard Communication Standard (29 CFR 1910.1200).

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SARA Title III

Ingredient	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313
1,1,1,2-Tetrafluoroethane	Not listed.	Not listed.	Not listed.	Not listed.
Hexamethyldisiloxane	Not listed.	Not listed.	Not listed.	Not listed.
Trans-dichloroethylene	Not listed.	Not listed.	1,000	Not listed.
Octamethyltrisiloxane	Not listed.	Not listed.	Not listed.	Not listed.
Ethanol	Not listed.	Not listed.	Not listed.	Not listed.
Octamethylcyclotetrasiloxane	Not listed.	Not listed.	Not listed.	Not listed.

State Regulations

California Proposition 65:

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Global Inventories

Ingredient	Canada DSL/NDSL	USA TSCA
1,1,1,2-Tetrafluoroethane	DSL	Yes.
Hexamethyldisiloxane	DSL	Yes.
Trans-dichloroethylene	DSL	Yes.
Octamethyltrisiloxane	DSL	Yes.
Ethanol	DSL	Yes.
Octamethylcyclotetrasiloxane	DSL	Yes.

HMIS - Hazardous Materials Identification System

Health - 1 Flammability - 0 Physical Hazard - 0 PPE - B

NFPA - National Fire Protection Association:

Health - 1 Fire - 0 Reactivity - 0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

WHMIS Classification(s):

- Class A - Compressed Gas
- Class D2A - Reproductive Toxicity
- Class D2A - Mutagenicity
- Class D2B - Skin/Eye Irritant

WHMIS Hazard Symbols:



SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

OSHA (O) Occupational Safety and Health Administration.

ACGIH (G) American Conference of Governmental Industrial Hygienists.

- A1 - Confirmed human carcinogen.
- A2 - Suspected human carcinogen.
- A3 - Animal carcinogen.
- A4 - Not classifiable as a human carcinogen.
- A5 - Not suspected as a human carcinogen.

IARC (I) International Agency for Research on Cancer.

- 1 - The agent (mixture) is carcinogenic to humans.
- 2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

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2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.

3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.

4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

NTP (N) National Toxicology Program.

1 - Known to be carcinogens.

2 - Reasonably anticipated to be carcinogens.

Section 16: OTHER INFORMATION

Disclaimer:

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

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