



MATERIAL SAFETY DATA SHEET

1. Chemical Product and Company Identification

Product Name: Precision Optical Cleaner; #MCC-POC03S; #MCC-POC03H

Chemical Family: Hydrofluoroethers (HFEs) blended with alcohol.

Packaged By: MicroCare Corp., 595 John Downey Drive, New Britain, CT 06051 USA CAGE/FSCM: OATV9

Emergency Telephone: CHEMTREC (800) 424-9300

2. Composition/Information on Ingredients

Chemical Name	Wt.%Range	TLV Units
Methyl Nonafluoroisobutyl Ether CAS # 163702-08-7	19.0-76.0	See Section 8
Methyl Nonafluorobutyl Ether CAS # 163702-07-6	19.0-76.0	See Section 8
Isopropyl Alcohol CAS # 67-63-0	05.0-15.0	400 ppm

All components of this material are listed on the TSCA inventory.

3. Hazard Identification

Emergency Overview: Colorless liquid with a slight alcohol odor.

This product is not flammable. Liquid will irritate eyes and skin under repeated or prolonged exposure. Product vapors displace air and can cause asphyxiation especially in confined spaces.

Potential Health Effects

Eyes: Liquid contact will irritate eyes and may cause redness, swelling, pain, tearing, and hazy vision. Persons wearing contact lenses should wear chemical protective safety glasses when exposed to this product.

Skin: For repeated contact: dry/chapped skin, risk of chronic dermatitis.

Ingestion: Harmful if swallowed. Irritating to the mouth, throat and stomach. May be absorbed after ingestion and cause target organ effects.

Inhalation: Symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Intentional misuse or deliberate inhalation may cause death without warning.

Medical Conditions Aggravated by Exposure: Preexisting disease of the heart, lungs, skin and eyes.

Target Organ Effects: Central Nervous System Depression: Signs may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness and unconsciousness.

4. First Aid Measures

Eyes: Immediately flush with water. Remove any contact lenses and continue flushing for 15 minutes, lifting eyelids occasionally until no evidence of the chemical remains. If irritation develops or persists call a physician.

Skin: Wash promptly with soap and water. Remove contaminated clothing and shoes and replace with clean clothing.

Ingestion: Do NOT induce vomiting unless instructed to do so by medical personnel. Immediately give two glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Inhalation: Remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do not give Epinephrine. Call a physician.

5. Firefighting Measures

Flash Point: None; TCC/TOC **Flammable Limits in Air:** LEL/UEL (% by volume): Not Established

Autoignition Temperature: Not Established

Extinguishing Media: CO₂, dry chemical, water spray, water fog.

Special Firefighting Procedures: Evacuate personnel. Wear self contained breathing apparatus (SCBA) and full protective equipment. Decomposition may occur. Containers generate pressure when heated causing violent bursting and dangerous propelling of container

6. Accidental Release Measures

Spill or Leak: Evacuate area, absorb spilled liquid with commercial, nonflammable absorbent i.e. sand, vermiculite. Remove unprotected personnel. Protected personnel should remove ignition sources and shut off fire sources. Provide ventilation. Shovel (spark proof) absorbent material into drums and close. Do not flush to sewer.

7. Handling and Storage

Avoid breathing vapors or mist. Do not eat, drink or smoke when using this product. Use only with adequate ventilation. Avoid repeated or prolonged contact with eyes, skin or clothing. Wash thoroughly after handling. Do not store in direct sunlight. Store in cool dry place (below boiling point of 54°C), away from heat, sparks or flames which may generate toxic decomposition products. Vapors are heavy and may concentrate in low poorly ventilated areas. Keep away from children.

8. Exposure Controls/Personal Protection

Respiratory Protection: Use only with adequate ventilation. Keep container tightly closed. Use approved NIOSH self-contained or supplied air respirators for emergencies and in situations where air may be displaced by vapors.

Eye Protection: Use chemical protective safety glasses.

Protective Clothing: Where there is potential for skin contact, use appropriate impervious gloves, apron, pants and jacket.

Exposure Guidelines: Applicable Exposure Limits.

Methyl Nonafluoroisobutyl Ether:

TWA (AIHA) 750 ppm

Methyl Nonafluorobutyl Ether:

TWA (AIHA) 750 ppm

Isopropyl Alcohol:

TWA (OSHA) 400 ppm

STEL (ACGIH) 400 ppm

TWA (ACGIH) 200 ppm

NFPA, NPCA-HIMIS RATING:

Health	3
Flammability	1
Reactivity	0

Personal Protection rating to be supplied by user depending on use conditions.

9. Physical and Chemical Properties

Physical Form:	Clear colorless liquid
Odor:	Slight alcohol
Boiling Point:	54°C / 129°F
pH:	Not Applicable
Solubility in Water:	Slight
Specific Gravity:	1.37 g/ml
% Volatile by Weight:	100
Vapor Pressure:	207 mm/hg at 25°C
Vapor Density (air=1):	7.0

10. Reactivity

Chemical Stability: Material is stable.

Hazardous Polymerization: Will not occur.

Incompatibilities: Alkali or alkaline earth metals powdered Al, Zn, Be, Na, Mg, etc. Incompatible w/strong bases such as NaOH, KOH, etc.

Decomposition Products: Decomposes with heat. High temperatures (open flame, glowing metal surfaces, etc.) can decompose forming carbon dioxide, carbon monoxide, hydrogen fluoride and possibly perfluoroisobutylene (PFIB).

11. Toxicological Information

Toxicity information for the individual components of this product are listed below.

Methyl Nonafluoroisobutyl Ether and Methyl Nonafluoroisobutyl Ether: Acute Inhalation Lethal Concentration: >1000,000 ppm (4 hr.). Oral Toxicity: Practically nontoxic (LD50>5g/kg in albino rat). Developmental toxicity: No abnormal effects observed. Mutagenicity: Not a mutagen in reverse mutation or chromosomal aberration assays. Cardiac Sensitization: No signs of sensitization at exposures up to 1000,000 ppm. Primary Dermal Irritation: Minimally Irritating. Dermal Sensitization: Not a skin sensitizer.

Carcinogenicity: None of the components present in this material are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

12. Ecological Information

Aquatic Toxicity:

Testing results indicate that the components to this cleaner have insignificant toxicity to aquatic organisms at their saturation point (Lowest LC50, EC50 or IC50 > substance water solubility). These compounds are highly volatile and have high Henry's Law constants and are thus expected to move rapidly through vaporization from solution in an aquatic compartment or from a soil surface in a terrestrial compartment to the atmosphere.

13. Disposal Considerations

Waste Disposal: Reclaim by distillation or remove to a permitted waste disposal facility. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations.

EPA Hazardous Waste Number (RCRA): Not Regulated

14. Transportation Information

Bulk Packaging/Non Aerosol:

Not Regulated as Hazardous Material by DOT, IMO, or IATA.

15. Regulatory Information

Section 313 Supplier Information: This material contains the following toxic chemicals subject to the emergency reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40 CFR 372:

CAS#	Chemical Name	% by Weight
	None	

This information must be included in all MSDSs that are copied and distributed for this material.

Title III Hazard Communications Sections 311, 312

Acute	Yes
Chronic	No
Fire	No
Reactivity	No
Pressure	Yes

Lists:

SARA Extremely Hazardous Substance	No
CERCLA Hazardous Substance	No
SARA Toxic Chemicals	No

16. Other Information

For additional information, contact Tech Support at MicroCare: Telephone (860) 827-0626 or email: techsupport@microcare.com