
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Code	38460
Trade Name	MICROPOSIT MF-319 DEVELOPER
Manufacturer/Supplier	Shipley Company
Address	455 Forest St. Marlborough, Massachusetts 01752
Phone Number	(508) 481-7950
Emergency Phone Number	(508) 481-7950
Chemtrec #	(800) 424-9300
MSDS first issued	3 July 1996
MSDS data revised	6 February 1997
Prepared By:	Tammy Blakeslee, C.I.H.
Local Sales Company	Shipley Company, 455 Forest Street, Marlboro, MA 01752 (508-481-7950)

2. COMPOSITION/INFORMATION ON THE INGREDIENTS

Hazardous Components in Preparation for US		
Component Name	Codes	Concentration
1. water	7732-18-5	97.00 - 99.00
2. Surfactant		0.01 - 1.00
3. tetramethylammonium hydroxide	75-59-2	2.00 - 3.00

3. HAZARD IDENTIFICATION

Main Hazards	- Irritant - Skin - Eye
Routes of Entry	Inhalation, ingestion, eye and skin contact.
Carcinogenic Status	Not considered carcinogenic by NTP, IARC and OSHA
Target Organs	- Skin - Eye
Health Effects - Eyes	Liquid, mist or vapor may cause slight transient irritation. Effects may be delayed for several hours.
Health Effects - Skin	Material may cause irritation. Repeated or prolonged contact may produce defatting of the skin leading to irritation and dermatitis. Effects may be delayed.
Health Effects - Ingestion	Swallowing may have the following effects: - irritation of mouth, throat and digestive tract
Health Effects - Inhalation	Exposure to vapor or mist may have the following effects: - irritation of nose, throat and respiratory tract

4. FIRST AID MEASURES



4. FIRST AID MEASURES (continued)

First Aid - Eyes	Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
First Aid - Skin	Wash skin with water. Obtain medical attention if blistering occurs or redness persists.
First Aid - Ingestion	Wash out mouth with water. Do not induce vomiting. Obtain medical attention.
First Aid - Inhalation	Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.
Advice to Physicians	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media	Use water spray, foam, dry chemical or carbon dioxide.
Special Fire-Fighting Procedures	None.
Unusual Fire & Explosion Hazards	None known.
Protective Equipment for Fire-Fighting	No special fire-fighting clothing required.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures	Spills may be absorbed with appropriate absorbent material for alkaline materials.
Personal Precautions	Wear appropriate protective clothing.
Environmental Precautions	Prevent the material from entering drains or water courses.

7. HANDLING AND STORAGE

Handling	Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed when not in use.
Storage	Store in original containers. Storage area should be: - cool - dry - well ventilated - away from incompatible materials
Other	No special precautions necessary.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION



8. EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Occupational Exposure Standards

1. tetramethylammonium hydroxide None assigned.

Engineering Control Measures

Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

Respiratory Protection

Respiratory protection not normally required. Respiratory protection if there is a risk of uncontrolled exposure to vapor. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Hand Protection

Neoprene or nitrile gloves.

Eye Protection

Chemical goggles.

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Clear
Odor	Amine
VOC (g/l)	Not applicable.
Specific Gravity	1.001
pH	13
Boiling Range/Point (°C/F)	100 / 212
Flash Point (PMCC) (°C/F)	Not applicable.
Explosion Limits (%)	Not applicable.
Solubility in Water	Completely soluble.
Vapor Density (Air = 1)	Data not available.
Evaporation Rate	Slower than ether
Vapor Pressure	Tetramethylammonium Hydroxide: 17.5 mmHg at 20 °C.

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	- contact with incompatible materials
Incompatibilities	- Acids - Strong oxidizing agents
Hazardous Polymerization	Will not occur.

10. STABILITY AND REACTIVITY (continued)

Hazardous Decomposition Products	- methanol - triethylamine - carbon monoxide - oxides of nitrogen
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11. TOXICOLOGICAL INFORMATION

Acute Data	Low order of acute toxicity predicted. DOT Corrosivity testing conducted on stainless steel and laboratory animals determined that this product is not corrosive.
Chronic/Subchronic Data	No adverse effects are expected.
Genotoxicity	No adverse effects are expected.
Reproductive/Developmental Toxicity	No adverse reproductive or fetal developmental effects are expected.
Additional Data	None.

12. ECOLOGICAL INFORMATION

Mobility	The product will dissolve rapidly in water. The product will leach into soil.
Persistence/Degradability	If neutralized, this material may be biodegradable.
Bio-accumulation	If neutralized, this material may be biodegradable.
Ecotoxicity	Do not discharge directly to surface water. A pH neutralized solution has been shown to be toxic to aquatic organisms. Tests on the following species gave a 96h LC50 of 0.07-1.2mg/litre: - ceriodaphnia dubia (water flea)

13. DISPOSAL CONSIDERATIONS

Product Disposal	Do not discharge directly to surface water. Dispose of in accordance with all applicable local and national regulations.
Container Disposal	Labels should not be removed from containers until they have been cleaned. Empty containers may contain hazardous residues. Dispose of containers with care.

14. TRANSPORT INFORMATION

DOT Ground:	Not Regulated
UN Proper Shipping Name	None.
UN Class	None.



14. TRANSPORT INFORMATION (continued)

UN Number	None.
UN Packaging Group	None.
N.O.S. 1:	Not applicable.
N.O.S. 2:	Not applicable.
Subsidiary Risks	None.
ADR/RID Substance Identification Number	None assigned.
RQ	None.
Marine Pollutant	No.

15. REGULATORY INFORMATION

TSCA Listed	Yes.
TSCA Exemptions	
WHMIS Classification	D.2.B
MA Right To Know Law	All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at the de minimus concentration have been identified in the hazardous ingredients section of the MSDS.
California Proposition 65	This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.
SARA TITLE III-Section 311/312 Categorization (40 CFR 370)	Immediate health hazard
SARA TITLE III-Section 313 (40 CFR 372)	This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Rating- FIRE	0
NFPA Rating- HEALTH	1
NFPA Rating- REACTIVITY	0
NFPA Rating- SPECIAL	None.
Revisions Highlighted	Main Hazards Ecological Information Disposal
Abbreviations	CAS#: Chemical Abstract Services Number ACGIH: American Conference of Governmental Industrial Hygienists OSHA: Occupational Safety and Health Administration TLV: Threshold Limit Value PEL: Permissible Exposure Limit STEL: Short Term Exposure Limit NTP: National Toxicology Program IARC: International Agency for Research on Cancer



16. OTHER INFORMATION (continued)

R: Risk
S: Safety
LD50: Lethal Dose 50%
LC50: Lethal Concentration 50%
BOD: Biological Oxygen Demand
Koc: Soil Organic Carbon Partition Coefficient.
TLM: Median Tolerance Limit

Disclaimer

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