

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Code 31140
Trade Name MICROPOSIT 354 DEVELOPER
Manufacturer/Supplier Shipley Company
Address 455 Forest St.
Marlborough, Massachusetts 01752
Phone Number (508) 481-7950
Emergency Phone Number (508) 481-7950
Chemtec # (800) 424-9300
MSDS first issued 28 August 1996
MSDS data revised 14 October 1997
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(508-481-7950)

2. COMPOSITION/INFORMATION ON THE INGREDIENTS

Components in Product

Table with 3 columns: Component Name, CAS# / Codes, Concentration. Rows include water, sodium tetraborate decahydrate, Sodium hydroxide, and Inorganic Borates.

3. HAZARD IDENTIFICATION

Main Hazards - Irritant - Skin - Eye
Routes of Entry Inhalation - Skin Contact
Carcinogenic Status Not considered carcinogenic by NTP, IARC and OSHA
Target Organs - Eye - Skin
Health Effects - Eyes Liquid will cause severe conjunctival irritation, corneal damage, and may result in loss of vision. Vapor or mist will cause severe conjunctival irritation and corneal damage.
Health Effects - Skin Material will cause severe irritation and may cause chemical burns. Effects may be delayed.
Health Effects - Ingestion Swallowing may have the following effects:
Health Effects - Inhalation - severe irritation of mouth, throat and digestive tract
Exposure to vapor or mist may have the following effects:
- severe irritation of nose, throat and respiratory tract
Exposure to mist at high concentrations may have the following effects:
- severe irritation to nose, throat and respiratory tract and possibly lung damage

4. FIRST AID MEASURES

First Aid - Eyes Immediately flush the eye with plenty of water for at least 20 minutes, holding the eye open. Obtain medical attention immediately.
First Aid - Skin Immediately flush the skin with large quantities of water, preferably under a shower. Remove contaminated clothing while flushing skin. Continue washing for at least 15 minutes. Contaminated clothing should be washed or dry-cleaned before re-use. Obtain medical attention immediately
First Aid - Ingestion Do not induce vomiting. Wash out mouth with water. Obtain medical attention immediately
First Aid - Inhalation Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately
Advice to Physicians Treat symptomatically. Treat skin burns conventionally.

5. FIRE FIGHTING MEASURES

Extinguishing Media Use dry chemical. Use water spray, fog or alcohol resistant foam.
Special Fire-Fighting Procedures No specific measures necessary.
Unusual Fire & Explosion Hazards None known.
Protective Equipment for Fire-Fighting Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures Spills may be absorbed with appropriate absorbent material for alkaline materials. Transfer into suitable containers for recovery or disposal.
Personal Precautions Wear appropriate protective clothing. Wear respiratory protection. Material can create slippery conditions underfoot.
Environmental Precautions Prevent the material from entering drains or water courses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

7. HANDLING AND STORAGE

Handling Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Emergency shower and eye wash facilities should be readily available. Avoid inhaling vapor Keep container tightly closed when not in use.
Storage Store in original containers. Storage area should be:
- cool - dry - well ventilated - out of direct sunlight - away from incompatible materials

Other
None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
sodium tetraborate decahydrate OSHA: PEL 10mg/m3 8h TWA. ACGIH: TLV 5mg/m3 8h TWA.
Sodium hydroxide OSHA: PEL 2mg/m3 8h TWA. ACGIH: TLV 2mg/m3 Ceiling limit. UK EH40: OES 2mg/m3 15min TWA.

	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 if there is a risk of exposure to high vapor concentrations. 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 gloves.
	Eye Protection	Chemical goggles and face shield.
	Body Protection	- rubber apron

9. **PHYSICAL AND CHEMICAL PROPERTIES**

Physical State	Liquid
Color	Clear
Odor	Odorless
VOC (g/l)	0.0
Specific Gravity	1.019
pH	>13
Boiling Range/Point (°C/F)	129 / 289
Flash Point (PMCC) (°C/F)	Not applicable.
Explosion Limits (%)	Not applicable.
Solubility in Water	Completely soluble.
Vapor Density (Air = 1)	Not applicable.
Evaporation Rate	Not applicable.
Vapor Pressure	Sodium hydroxide: 6.3 mmHg at 26 °C. 18 mmHg at 51 °C.

10. **STABILITY AND REACTIVITY**

Stability	Stable under normal conditions.
Conditions to Avoid	- contact with incompatible materials
Incompatibilities	- Acids - Aldehydes - Hydrocarbon solvents - Aromatic hydrocarbons - Reducing agents
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	None known.

11. **TOXICOLOGICAL INFORMATION**

Acute Data	Sodium hydroxide: Oral LD50 (rat) 140-340mg/kg. Dermal LD50 (rabbit) 2000mg/kg.
Chronic/Subchronic Data	Sodium tetraborate decahydrate: Oral LD50 (rat) 4500 - 5000mg/kg. No relevant studies identified.
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 is involatile and water soluble and will partition to the aqueous phase.
Persistence/Degradability	The product is expected to be readily biodegradable.
Bio-accumulation	Product is not expected to bioaccumulate.
Ecotoxicity	Sodium Hydroxide: Tests on the following species gave a TLM96 of 125mg/litre: - mosquito fish Tests on the following species gave a TLM24 of 76.6mg/litre: - bluegills

13. **DISPOSAL CONSIDERATIONS**

Product Disposal	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:	Sodium hydroxide solution
UN Proper Shipping Name	Sodium hydroxide solution
UN Class	(8) Corrosive
UN Number	UN1824
UN Packaging Group	II
N.O.S. 1:	Not applicable.
N.O.S. 2:	Not applicable.
Subsidiary Risks	None.
ADR/RID Substance Identification Number	None.
CERCLA RQ	Sodium Hydroxide (1000#)
Marine Pollutant	None.

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	2
NFPA Rating- REACTIVITY	0
NFPA Rating- SPECIAL	None.
Revisions Highlighted	Data not available.
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 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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