



MATERIAL SAFETY DATA SHEET
MICROPOSIT 351 DEVELOPER
30900 2.00 US US 09.05.1997 MSDS_US

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Code 30900
Trade Name MICROPOSIT 351 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 26 September 1996
MSDS data revised 9 May 1997
Prepared By: Gregory S. Dripps
Local Sales Company Shipley Company, 455 Forest Street, Marlboro, MA 01752
(508-481-7950)

2. COMPOSITION/INFORMATION ON THE INGREDIENTS

Components in Product	CAS# / Codes Concentration	
Component Name		
Sodium hydroxide	1310-73-2	1.00 - 5.00
water	7732-18-5	85.00 - 90.00
sodium tetraborate decahydrate	1303-96-4	5.00 - 10.00
Inorganic Borates		0.01 - 1.00

3. HAZARD IDENTIFICATION

Main Hazards - Corrosive - 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 chemical burns. Effects may be delayed.

Health Effects - Ingestion Swallowing may have the following effects:
- corrosion of mouth, throat and digestive tract

3. HAZARD IDENTIFICATION

Health Effects - Inhalation

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 hydroxide	OSHA: PEL 2mg/m ³ 8h TWA. ACGIH: TLV 2mg/m ³ Ceiling limit. UK EH40: OES 2mg/m ³ 15min TWA.
sodium tetraborate decahydrate	OSHA: PEL 10mg/m ³ 8h TWA. ACGIH: TLV 5mg/m ³ 8h 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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	1.084
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.
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11. TOXICOLOGICAL INFORMATION

Chronic/Subchronic Data	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

14. TRANSPORT INFORMATION

N.O.S. 1:	Not applicable.
N.O.S. 2:	Not applicable.
Subsidiary Risks	None.
ADR/RID Substance Identification Number	CLASS 8 - 42(b)
CERCLA RQ	Sodium Hydroxide (1000#)
Marine Pollutant	None.

15. REGULATORY INFORMATION

TSCA Listed	Yes
TSCA Exemptions	
WHMIS Classification	E
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, delayed 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	3
NFPA Rating- REACTIVITY	1
NFPA Rating- SPECIAL	None.
Revisions Highlighted	Composition/Information on the Components Main Hazards Occupational Exposure Standards
Abbreviations	CAS#: Chemical Abstract Services Number ACGIH: American Conference of Governmental Industrial Hygienists OSHA: Occupational Safety and Health Administration

16. OTHER INFORMATION

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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