

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Code 33990
Trade Name MICROPOSIT STR 1075 PHOTO RESIST
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 2 July 1996
MSDS data revised 16 February 1999
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 (508-481-7950)

2. COMPOSITION/INFORMATION ON THE INGREDIENTS

Hazardous Components in Preparation for US

Component Name	Codes	Concentration
ethyl lactate	97-64-3	48.00 - 53.00
Cresol Novolak Resin		30.00 - 40.00
n-butyl acetate	123-86-4	1.00 - 5.00
xylene	1330-20-7	1.00 - 5.00
Diazo Photoactive Compound		1.00 - 10.00
cresol	1319-77-3	0.10 - 0.20
Organic Siloxane Surfactant		0.01 - 1.00

3. HAZARD IDENTIFICATION

Main Hazards - Irritant - Combustible - Nervous System - Skin - Eye - Kidney - Liver
Routes of Entry Inhalation, ingestion, eye and skin contact, absorption.
Carcinogenic Status Not considered carcinogenic by NTP, IARC and OSHA
Target Organs - Nervous System - Skin - Eye - Liver - Kidney
Health Effects - Eyes Liquid or vapor may cause pain, transient irritation and superficial corneal effects.
Health Effects - Skin Material may cause slight irritation on prolonged or repeated contact. Repeated or prolonged contact may produce defatting of the skin leading to irritation and dermatitis.
Health Effects - Ingestion Swallowing may have the following effects:
 - irritation of mouth, throat and digestive tract - nausea - vomiting - diarrhea
 A large dose may have the following effects:
 - liver damage - kidney damage - central nervous system depression
Health Effects - Inhalation Exposure to vapor at high concentrations may have the following effects:
 - irritation of nose, throat and respiratory tract - liver damage - kidney damage - central nervous system depression

4. FIRST AID MEASURES

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. 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. Keep containers and surroundings cool with water spray.
Special Fire-Fighting Procedures This product may give rise to hazardous vapors in a fire. Vapors can travel a considerable distance to a source of ignition and result in flashback.
Unusual Fire & Explosion Hazards Pressure may build up in closed containers with possible liberation of combustible vapors.
Protective Equipment for Fire-Fighting Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures Contain and absorb using earth, sand or other inert material. Transfer into suitable containers for recovery or disposal. Finally flush area with plenty of water.
Personal Precautions Wear appropriate protective clothing. Wear respiratory protection. Eliminate all sources of ignition.
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. Store away from sources of heat or ignition. Storage area should be:
 - cool - dry - well ventilated - out of direct sunlight

Other
 None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
 ethyl lactate None assigned.

n-butyl acetate	ACGIH: TLV 150ppm (710mg/m3) 8h TWA. ACGIH: STEL 200ppm (950mg/m3) 15min TWA. OSHA: PEL 150ppm (710mg/m3) 8h TWA. OSHA: STEL 200ppm (950mg/m3) 15min TWA.
xylene	ACGIH: TLV 100ppm (435mg/m3) 8h TWA. ACGIH: STEL 150ppm (655mg/m3) 15min TWA. OSHA: PEL 100ppm (435mg/m3) 8h TWA. OSHA: STEL 150ppm (655mg/m3) 15min TWA.
oresol	ACGIH: TLV 5ppm (22mg/m3) 8h TWA. OSHA: PEL 5ppm (22mg/m3) 8h TWA. UK EH40: OES 5ppm (22mg/m3) 8h TWA. Can be absorbed through skin.
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	Butyl rubber gloves.
Eye Protection	Chemical goggles.
Body Protection	Normal work wear.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

Physical State	Viscous liquid
Color	Red
Odor	Sweet
VOC (g/l)	578.27
Specific Gravity	1.02
pH	Neutral
Boiling Range/Point (°C/F)	begins @ 120 / 248
Flash Point (PMCC) (°C/F)	39.4-40.5/103-105
Explosion Limits (%)	n-butyl acetate: Lower limit 1.7% xylene: Lower limit 1.1% ethyl lactate: Lower limit 1.6%
Solubility in Water	Slightly soluble
Vapor Density (Air = 1)	Heavier than air.
Evaporation Rate	Slower than ether
Vapor Pressure	Ethyl Lactate: 2.0 mmHg at 20 °C. n-butyl acetate: 15.0 mmHg at 25 °C. xylene: 6.0 mmHg at 20 °C.

10. **STABILITY AND REACTIVITY**

Stability	Stable under normal conditions.
Conditions to Avoid	- High temperatures - Static discharge
Incompatibilities	- Oxidizing agents - Bases - Acids
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	- carbon monoxide - Carbon Dioxide

11. **TOXICOLOGICAL INFORMATION**

Acute Data	ethyl lactate: Oral LD50 (mouse) 2500mg/kg. n-butyl acetate: Oral LD50 (rat) 14130mg/kg. xylene: Oral LD50 (rat) 4300mg/kg.
Chronic/Subchronic Data	No data.
Genotoxicity	It was not mutagenic when tested in bacterial or mammalian systems.
Reproductive/Developmental Toxicity	Developmental effects were seen in laboratory animals only at dose levels that were maternally toxic.
Additional Data	None known.

12. **ECOLOGICAL INFORMATION**

Mobility	No relevant studies identified.
Persistence/Degradability	n-butyl acetate: BOD5 = 46.2% of ThOD. BOD20 = 65.7% of ThOD. ethyl lactate: COD = 0.00166g/g.
Bio-accumulation	Product is not expected to bioaccumulate.
Ecotoxicity	n-butyl acetate: Tests on the following species gave a 96h LC50 of 44-205mg/litre: - daphnia ethyl lactate: Tests on the following species gave a 48h EC50 of 683mg/litre: - daphnia

13. **DISPOSAL CONSIDERATIONS**

Product Disposal	Incineration is the recommended method of 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:	Not Regulated per 49 CFR 173.150(f)(2)
UN Proper Shipping Name	Flammable liquid, n.o.s.
UN Class	(3) Flammable Liquid
UN Number	UN1993
UN Packaging Group	III
N.O.S. 1:	ethyl lactate
N.O.S. 2:	xylene
Subsidiary Risks	None.

ADR/RID Substance Identification Number CLASS 3 - 31(c)
CERCLA RQ Cresol (100#) xylene (100#)
Marine Pollutant No.

15.

REGULATORY INFORMATION

TSCA Listed All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory) or are exempted from listing because a Low Volume Exemption has been granted in accordance with 40 CFR 723.50.

TSCA Exemptions

TSCA Sec.12(b) Export Notification Data not available.

WHMIS Classification D.2.B B.3

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, flammability hazard

SARA TITLE III-Section 313 (40 CFR 372) This product contains a chemical which is listed in Section 313 at or above de minimis concentrations.

16.

OTHER INFORMATION

NFPA Rating- FIRE 2

NFPA Rating- HEALTH 2

NFPA Rating- REACTIVITY 0

NFPA Rating- SPECIAL None.

Revisions Highlighted Flash Point (PMCC) (°C/F)

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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