



MATERIAL SAFETY DATA SHEET
MEGAPOSIT SPR 220 (0.7 - 7.0) PHOTO RESIST
30810 3.00 US US 08.02.1999 MSDS_US

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Code 30810
Trade Name MEGAPOSIT SPR 220 (0.7 - 7.0) PHOTO RESIST
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 5 February 1999
MSDS data revised 8 February 1999
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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
ethyl lactate	97-64-3	30.00 - 52.00
anisole	100-66-3	15.00 - 25.00
Diazo Photoactive Compound		1.00 - 10.00
Cresol Novolak Resin		14.00 - 40.00
cresol	1319-77-3	0.01 - 0.99
2-Methyl Butyl Acetate	624-41-9	1.00 - 5.00
n-amyl acetate	628-63-7	2.00 - 7.00
Organic Siloxane Surfactant		0.01 - 0.10

3. HAZARD IDENTIFICATION

Main Hazards - Irritant - Combustible - Skin - Eye - Nervous System

Routes of Entry Inhalation, ingestion, eye and skin contact, absorption.

Carcinogenic Status Not considered carcinogenic by NTP, IARC and OSHA

Target Organs - Skin - Eye - Nervous System

Health Effects - Eyes Liquid or vapor may cause slight transient irritation.

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.



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3. HAZARD IDENTIFICATION

Health Effects - Ingestion	Swallowing may have the following effects: - irritation of mouth, throat and digestive tract - nausea - vomiting - diarrhea
Health Effects - Inhalation	Exposure to vapor at high concentrations may have the following effects: - irritation of nose, throat and respiratory tract - dizziness - drowsiness - loss of coordination - headache - nausea - vomiting

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.
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6. ACCIDENTAL RELEASE MEASURES

	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.
cresol	ACGIH: TLV 5ppm (22mg/m ³) 8h TWA. OSHA: PEL 5ppm (22mg/m ³) 8h TWA. UK EH40: OES 5ppm (22mg/m ³) 8h TWA. Can be absorbed through skin.
2-Methyl Butyl Acetate	None assigned.
n-amyl acetate	ACGIH: TLV 100ppm (532mg/m ³) 8h TWA. OSHA: PEL 100ppm (525mg/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	Butyl rubber gloves.
Eye Protection	Chemical goggles.



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Body Protection Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Red Amber
Odor	Mild Ester
VOC (g/l)	605-861
Specific Gravity	1.05-1.1
pH	Neutral
Boiling Range/Point (°C/F)	150 / 302
Flash Point (PMCC) (°C/F)	43.3-45.6 / 110-114
Explosion Limits (%)	Lower limit ~2%
Solubility in Water	Insoluble.
Vapor Density (Air = 1)	Heavier than air.
Evaporation Rate	Slower than ether
Vapor Pressure	Ethyl Lactate: 2.0 mmHg at 20 °C. Anisole: 9.7 mmHg at 42 °C. Amyl Acetate (mix): 4.00 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 - phenols - oxides of nitrogen - oxides of sulfur

11. TOXICOLOGICAL INFORMATION

Acute Data	ethyl lactate: Oral LD50 (mouse) 2500mg/kg. Anisole: Oral LD50 (rat) 3700mg/kg. n-Amyl Acetate: Oral LD50 (rat) 16600mg/kg.
Chronic/Subchronic Data	No data.



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11. TOXICOLOGICAL INFORMATION

Genotoxicity	No adverse effects are expected.
Reproductive/Developmental Toxicity	No adverse reproductive or fetal developmental effects are expected.
Additional Data	None known.

12. ECOLOGICAL INFORMATION

Mobility	No relevant studies identified.
Persistence/Degradability	Ethyl Lactate: COD = 0.00166g/g.
Bio-accumulation	Product is not expected to bioaccumulate.
Ecotoxicity	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:	Anisole
Subsidiary Risks	None.
ADR/RID Substance	CLASS 3 - 31(c)



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14. TRANSPORT INFORMATION

Identification Number
CERCLA RQ Cresol (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 This product does not contain any substances subject to Section 12(b) export notification.

WHMIS Classification
MA Right To Know Law D.2.B B.3
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 does not contain 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 TSCA Sec.12(b) Export Notification

Abbreviations CAS#: Chemical Abstract Services Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value



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16. OTHER INFORMATION

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

The data contained herein is based on information that Shipley Company believes to be reliable, but no expressed or implied warranty is made with regard to the accuracy of such data or its suitability for a given situation. Such data relates only to the specific product described and not to such products in combination with any other product and no agent of Shipley Company is authorized to vary any of such data. Shipley Company and its agents disclaim all liability for any action taken or foregone on reliance upon such data.
