ELECTRONIC MATERIALS
ROHM AND HAAS

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

MEGAPOSIT(TM) SPR(TM) 220-7.0 Positive Photoresist

Revision date: 04/02/2004

Supplier

Rohm and Haas Electronic Materials LLC
455 Forest Street
Marlborough, MA 01752 United States of America

For non-emergency information contact: 508-481-7950

Emergency telephone number

Chemtrec	800-424-9300
Rohm and Haas Emergency	215-592-3000

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Ethyl lactate	97-64-3	30.0 - 50.0 %
Anisole	100-66-3	15.0 - 25.0 %
Diazo Photoactive Compound		< 10.0 %
Cresol novolak resin		< 35.0 %
Cresol	1319-77-3	< 0.5 %
2-Methyl Butyl Acetate	624-41-9	< 5.0 %
n-amyl acetate	628-63-7	< 10.0 %
Organic Siloxane Surfactant		< 1.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form	liquid
Colour	Red Amber
Odour	ester-like

Hazard Summary	**CAUTION!** Combustible liquid and vapor. Causes irritation to eyes, nose, and respiratory tract. Prolonged, repeated contact, inhalation, ingestion, or absorption through the skin, may cause toxic effects to internal organ systems (liver, kidney, central nervous system).

Potential Health Effects

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

Eyes: May cause pain, transient irritation and superficial corneal effects.

Skin: Material may cause irritation.
Prolonged or repeated exposure may have the following effects:
central nervous system depression
drowsiness
defatting of skin leading to irritation and dermatitis

Ingestion: Swallowing may have the following effects:
irritation of mouth, throat and digestive tract
Repeated doses may have the following effects:
central nervous system depression
drowsiness

Inhalation: Inhalation may have the following effects:
irritation of nose, throat and respiratory tract
Higher concentrations may have the following effects:
systemic effects similar to those resulting from ingestion

Target Organs: Eye
Respiratory System
Skin
nervous system

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA

4. FIRST AID MEASURES

Inhalation: Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

Skin contact: Wash skin with water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

Eye contact: 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.

Ingestion: Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Induce vomiting if person is conscious. Immediate medical attention is required Never administer anything by mouth if a victim is losing conciousness, is unconcious or is convulsing.

Notes to physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point 45 °C (113 °F)

Suitable extinguishing media: Use water spray, foam, dry chemical or carbon dioxide.
Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting: 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.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Pressure may build up in closed containers with possible liberation of combustible vapors.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear suitable protective clothing.
Wear respiratory protection.
Eliminate all ignition sources.

Environmental precautions
Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Methods for cleaning up
Contain spills immediately with inert materials (e.g., sand, earth).
Transfer into suitable containers for recovery or disposal.
Finally flush area with plenty of water.

7. HANDLING AND STORAGE

Handling
Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed.
Further information on storage conditions: Keep away from heat, sparks, flame, and other sources of ignition. Practice good personal hygiene to prevent accidental exposure.

Storage
Storage conditions: Store in original container. Keep away from heat and sources of ignition.
Storage area should be: cool dry well ventilated out of direct sunlight

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
Ethyl lactate	Rohm and Haas	TWA	5 ppm
	Rohm and Haas	STEL	15 ppm

Component	Regulation	Type of listing	Value
Anisole	Rohm and Haas	TWA	5 ppm
	Rohm and Haas	STEL	10 ppm

Component	Regulation	Type of listing	Value
Cresol	ACGIH	TWA	22 mg/m3 5 ppm
	ACGIH	SKIN_DES	
	OSHA_TRANS	PEL	22 mg/m3 5 ppm
	OSHA_TRANS	SKIN_DES	

Component	Regulation	Type of listing	Value
2-Methyl Butyl Acetate	Rohm and Haas	TWA	50 ppm
	Rohm and Haas	STEL	100 ppm
	ACGIH	TWA	50 ppm
	ACGIH	STEL	100 ppm
	ACGIH		

Component	Regulation	Type of listing	Value
n-amyl acetate	Rohm and Haas	TWA	50 ppm
	Rohm and Haas	STEL	100 ppm
	ACGIH	TWA	50 ppm
	ACGIH	STEL	100 ppm
	OSHA_TRANS	PEL	525 mg/m3 100 ppm

Eye protection: goggles

Hand protection: Butyl rubber gloves. Other chemical resistant gloves may be recommended by your safety professional.

Skin and body protection: Normal work wear.

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.

Engineering 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	Red Amber
Odour	ester-like
pH	7
Boiling point/range	150 °C (302 °F)
Flash point	45 °C (113 °F)

Component: **Ethyl lactate**

Vapour pressure	1.7 mmHg at 20 °C

Component: **Anisole**

Vapour pressure	9.7 mmHg at 42 °C
Relative vapour density	Heavier than air.
Water solubility	insoluble
Relative density	1.09
Evaporation rate	Slower than ether
VOC's	710 g/l

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	Stable under normal conditions.
Conditions to avoid	High temperatures Static discharge
Materials to avoid	Oxidizing agents bases acids
Hazardous decomposition products	Carbon monoxide, carbon dioxide, phenols, oxides of sulfur, nitrogen oxides (NOx),
polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: **Ethyl lactate**

Acute oral toxicity	LD50 rat >2,000 mg/kg

Component: **Anisole**

Acute oral toxicity LD50 rat 3,700 mg/kg

Component: **Cresol**
Acute oral toxicity LD50 rat 2,737 mg/kg

Component: **n-amyl acetate**
Acute oral toxicity LD50 rat >1,600 mg/kg

Component: **Ethyl lactate**
Acute inhalation toxicity LC50 rat >5,400 mg/m3

Component: **Anisole**
Acute inhalation toxicity LC50 rat >5 mg/l

Component: **Cresol**
Acute inhalation toxicity LC50 rat 8 h 35.38 mg/l

Component: **n-amyl acetate**
Acute inhalation toxicity 16,000 mg/m3

Component: **Ethyl lactate**
Acute dermal toxicity LD50 rat >5,000 mg/kg

Component: **Cresol**
Acute dermal toxicity LD50 rabbit > 5,000 mg/kg

Component: **n-amyl acetate**
Acute dermal toxicity LD50 rabbit >17,500 mg/kg

Component: **Ethyl lactate**
Skin irritation A single application to rabbit skin produced mild irritation.

Component: **Anisole**
Skin irritation A single application to rabbit skin produced mild irritation.

Component: **Ethyl lactate**
Eye irritation Single application to the rabbit eye produced conjunctival irritation.

Component: **Anisole**
Sensitization Did not cause sensitization on laboratory animals.

Component: **Ethyl lactate**
Toxicity to reproduction
Studies in laboratory animals have shown no teratogenic effects in the following species:

Component: **Cresol**
Toxicity to reproduction
Developmental effects were seen in laboratory animals only at dose levels that were maternally toxic.

Component: **n-amyl acetate**
Toxicity to reproduction
Exposure of pregnant rabbits to vapor at 1500 ppm resulted in maternal toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Ethyl lactate

Ecotoxicity effects	
Toxicity to aquatic invertebrates	EC50 Daphnia magna 48 h 683 mg/l

Anisole

Ecotoxicity effects	
Toxicity to fish	LC50 Carp 48 h 120 mg/l
Toxicity to aquatic invertebrates	EC50 Daphnia magna 24 h 11 mg/l

n-amyl acetate

Ecotoxicity effects	
Toxicity to fish	LC50 Mosquito fish (Gambusia affinis) 96 h 65 mg/l
Toxicity to algae	EC50 Algae 24 h 550 mg/l
Toxicity to aquatic invertebrates	EC50 Daphnia magna 24 h 210 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal

Dispose in accordance with all local, state (provincial), and federal regulations. Incineration is the recommended method of disposal for containers. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

14. TRANSPORT INFORMATION

DOT

Not regulated per 49CFR 173.150(f)(2)

IMO/IMDG

Proper shipping name	RESIN SOLUTION
UN-No	UN 1866

Class	3
Packing group	III

15. REGULATORY INFORMATION

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Immediate, delayed, flammability hazard

SARA TITLE III: Section 313 Information (40CFR372)
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D):
U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
This product contains the following substance(s)which are subject to Section 12(b) export notification:
TSCA_12b Components: Amyl acetate 628-63-7

US. Toxic Substances Control Act (TSCA) All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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.

16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
NFPA	2	2	0

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAc	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
|	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and

may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Version: 3.0
Print Date: 04/04/2014
Layout 305413