



# SAFETY DATA SHEET

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## 1. PRODUCT AND COMPANY IDENTIFICATION

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**Product name** MEGAPOSIT™ SPR™ 660-1.0 POSITIVE PHOTORESIST

**Product Use Description** Chemical Specialty

**Supplier** ROHM AND HAAS ELECTRONIC MATERIALS  
A Subsidiary of The Dow Chemical Company  
(SHANGHAI) LTD.  
China, 31 SHANGHAI  
RM 1105, 1107, 1110, 139 FUTEXI YI ROAD  
WAI GAO QIAO FREE TRADE ZONE  
200131

**For non-emergency information contact:** 86-21-38511000

**Fax:** 86-21-58951818

**Emergency telephone number**  
+800 2537 8747

**Local emergency telephone number**  
021-6921-1032

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## 2. HAZARDS IDENTIFICATION

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### Hazardous classification

Flammable liquid - Category 3

Acute toxicity - Category 4 - Inhalation

Serious eye damage/eye irritation - Category 2A

Skin corrosion/irritation - Category 3

Target Organ Systemic Toxicant - Single exposure - Category 2 - Inhalation

Acute aquatic toxicity - Category 3



Signal word: **WARNING!**

### Hazards

Flammable liquid and vapour.  
Causes serious eye irritation.  
Causes mild skin irritation.  
Harmful if inhaled.  
Harmful to aquatic life.  
May cause damage to organs.

### Precautions

#### Prevention

Do not eat, drink or smoke when using this product.  
Avoid release to the environment.  
Keep container tightly closed.  
Use only outdoors or in a well-ventilated area.  
Wash thoroughly after handling.  
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Use explosion-proof equipment.  
Ground/bond container and receiving equipment.  
Wear protective gloves/ eye protection/ face protection.  
Take precautionary measures against static discharge.  
Vapors can travel to a source of ignition and flash back.

#### Response

If skin irritation occurs: Get medical advice/ attention.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/ attention.  
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
Call a POISON CENTRE or doctor/physician if you feel unwell.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Other hazards

no data available

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

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This product is a mixture.

Component	CAS-No.	Concentration
Ethyl lactate	97-64-3	30.0 - 40.0 %
Anisole	100-66-3	20.0 - 30.0 %
Cresol novolak resin		15.0 - 25.0 %
Diazo cresylic resin mixture		5.0 - 15.0 %
n-amyl acetate	628-63-7	1.0 - 10.0 %

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Diazo Photoactive Compound		1.0 - 5.0 %
2-Methyl Butyl Acetate	624-41-9	1.0 - 5.0 %
Organic Siloxane Surfactant		< 1.0 %
Cresol	1319-77-3	< 1.0 %

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#### 4. FIRST AID MEASURES

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**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. Immediate medical attention is required. Never administer anything by mouth if a victim is losing consciousness, is unconscious or is convulsing.

**Notes to physician:** Treat symptomatically.

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#### 5. FIRE-FIGHTING MEASURES

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**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.

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#### 6. ACCIDENTAL RELEASE MEASURES

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##### 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

Cover with absorbent or contain. Collect and dispose.

Transfer into suitable containers for recovery or disposal.

Finally flush area with plenty of water.

## 7. HANDLING AND STORAGE

### Precautions

Store locked up.

Store in a well-ventilated place.

### Handling

Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed.

### 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

**Further information on storage conditions:** Keep away from heat, sparks, flame, and other sources of ignition. Practice good personal hygiene to prevent accidental exposure.

## 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
2-Methyl Butyl Acetate	Rohm and Haas	TWA	50 ppm
	Rohm and Haas	STEL	100 ppm
	CN OEL	TWA	100 mg/m <sup>3</sup>
	CN OEL	STEL	200 mg/m <sup>3</sup>

Component	Regulation	Type of listing	Value
Cresol	ACGIH	TWA	5 ppm
	ACGIH	SKIN_DES	
	ECTLV	TWA	22 mg/m <sup>3</sup> 5 ppm
	CN OEL	TWA	10 mg/m <sup>3</sup>
	CN OEL	SKIN_DES	
	ACGIH	TWA Inhalable fraction and vapor.	20 mg/m <sup>3</sup>
	ACGIH	SKIN_DES Inhalable fraction and vapor.	

### Exposure controls

**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.

### Individual protection measures

**Eye/face protection:** Goggles

**Skin protection**

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

**Other 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Physical state</b>	liquid
<b>Colour</b>	red
<b>Odour</b>	ester-like
<b>Odour Threshold</b>	no data available
<b>pH</b>	ca.7
<b>Boiling point/boiling range</b>	150 °C
<b>Flash point</b>	43 - 45 °C
<b>Evaporation rate</b>	Slower than ether
<b>Flammability (solid, gas)</b>	no data available
<b>Lower explosion limit</b>	no data available
<b>Upper explosion limit</b>	no data available
Component: <b><u>Ethyl lactate</u></b>	
<b>Vapour pressure</b>	0.4999 kPa at 25 °C (77 °F)
Component: <b><u>Anisole</u></b>	
<b>Vapour pressure</b>	0.472 kPa at 25 °C (77 °F)
Component: <b><u>n-amyl acetate</u></b>	
<b>Vapour pressure</b>	0.4666 kPa at 25 °C (77 °F)
Component: <b><u>Cresol</u></b>	
<b>Vapour pressure</b>	0.0226 kPa at 25 °C (77 °F)
<b>Relative vapour density</b>	Heavier than air.
<b>Relative density</b>	1.07
<b>Water solubility</b>	insoluble
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Autoignition Temperature</b>	no data available
<b>Decomposition temperature</b>	no data available
<b>Viscosity, dynamic</b>	no data available
<b>Solubility in other solvents</b>	no data available
<b>VOC's</b>	560 - 910 g/cm <sup>3</sup>

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

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## 10. STABILITY AND REACTIVITY

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<b>Hazardous reactions</b>	Stable under normal conditions.
<b>Conditions to avoid</b>	High temperatures Static discharge
<b>Materials to avoid</b>	Oxidizing agents Bases Acids
<b>Hazardous decomposition products</b>	Carbon monoxide, carbon dioxide, phenols, oxides of sulfur, nitrogen oxides (NOx),
<b>Polymerisation</b>	Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

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**Exposure routes:** Inhalation, ingestion, eye and skin contact, absorption.

### Acute toxicity

#### Acute oral toxicity

Component: **Ethyl lactate**

LD50 rat > 2,000 mg/kg

Component: **Anisole**

LD50 rat 3,700 mg/kg

Component: **pentyl acetate**

LD50 rat > 1,600 mg/kg

Component: **Diazo Photoactive Compound**

LD50 rat > 2,000 mg/kg

Component: **2-methylbutyl acetat**

LD50 rat 12,306 mg/kg

Component: **Organic Siloxane Surfactant**

LD50 rat > 5,000 mg/kg

Component: **Cresol**

LD50 rat 1,454 mg/kg

#### Acute dermal toxicity

Component: **Ethyl lactate**

LD50 rat > 5,000 mg/kg

Component: **pentyl acetate**

LD50 rabbit > 17,500 mg/kg

Component: **Diazo Photoactive Compound**

LD50 rabbit > 2,000 mg/kg  
Component: **2-methylbutyl acetat**

LD50 rabbit 8,359 mg/kg  
Component: **Organic Siloxane Surfactant**

LD50 rat > 2,000 mg/kg  
Component: **Cresol**

LD50 rabbit 2,000 mg/kg

#### **Acute inhalation toxicity**

Component: **Ethyl lactate**

LC50 rat 4 h 5,400 mg/m<sup>3</sup>  
Component: **pentyl acetate**

16,000 mg/m<sup>3</sup>  
Component: **2-methylbutyl acetat**

LC50 rat 4 h >5.2 mg/l  
Component: **Cresol**

LC50 rat 8 h 35.38 mg/l

#### **Specific concentration limits**

The values listed below represent the percentages of ingredients of unknown toxicity.

20 - 30 % Acute oral toxicity

50 - 60 % Acute dermal toxicity

30 - 40 % Acute inhalation toxicity

#### **Skin corrosion/irritation**

Component: **Ethyl lactate**

A single application to rabbit skin produced mild irritation.

Component: **2-methylbutyl acetat**

rabbit Moderate irritation.

Component: **Organic Siloxane Surfactant**

A single application to rabbit skin produced mild irritation.

Component: **Cresol**

rabbit Corrosive

#### **Serious eye damage/eye irritation**

Component: **Ethyl lactate**

Single application to the rabbit eye produced conjunctival irritation.

Component: **Diazo Photoactive Compound**

rabbit slight irritation

Component: **2-methylbutyl acetat**

rabbit Moderate eye irritation

Component: **Organic Siloxane Surfactant**

Single application to the rabbit eye produced no signs of ocular irritation.

Component: **Cresol**

rabbit Corrosive

#### **Sensitisation**

no data available

**Carcinogenicity**

no data available

**Mutagenicity****Reproductive Cell Mutagenicity**

Component: **Cresol**

Not mutagenic in Ames Test. In vitro tests showed mutagenic effects

**Reproductive toxicity**

Component: **Ethyl lactate**

No adverse reproductive effects were observed in experimental animals.

Component: **pentyl acetate**

Exposure of pregnant rabbits to vapor at 1500 ppm resulted in maternal toxicity. The following effects were observed: decreased body weight. No adverse reproductive effects were observed in experimental animals.

Component: **Cresol**

**Teratogenicity**

Developmental effects were seen in laboratory animals only at dose levels that were maternally toxic.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

**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

**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

**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

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

Eye

Respiratory System

Skin

nervous system

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Component: **pentyl acetate**

Inhalation rat

NOEL: 1,200 mg/kg

none

Component: **Diazo Photoactive Compound**

Oral rat

28-day NOEL: 1,000 mg/kg

Repeated administration produced no systemic toxicity under the following study conditions:

A 28 day dermal toxicity study (rats): No Observed Effect Level = 1000 mg/kg, the highest allowable (limit) dose.



**Aspiration Hazard**

no data available

Component: **Cresol****Teratogenicity**

Developmental effects were seen in laboratory animals only at dose levels that were maternally toxic.

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**12. ECOLOGICAL INFORMATION**

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**Acute aquatic toxicity****Acute toxicity to fish**Component: **Ethyl lactate**LC50 Zebra fish (Danio/Brachydanio rerio) 96 h OECD Test Guideline 203 or Equivalent  
320 mg/lComponent: **pentyl acetate**LC50 Mosquito fish (Gambusia affinis) 96 h  
65 mg/lComponent: **2-methylbutyl acetat**LC50 Fathead minnow (Pimephales promelas) 96 h Method Not Specified  
69 mg/lComponent: **Cresol**LC50 Zebra fish (Danio/Brachydanio rerio) 96 h Method Not Specified  
9 mg/lLC50 Bluegill sunfish (Lepomis macrochirus) 96 h Method Not Specified  
10 mg/lLC50 Pimephales promelas (fathead minnow) 96 h Method Not Specified  
12.8 mg/l**Acute toxicity to aquatic invertebrates**Component: **Ethyl lactate**EC50 Daphnia magna (Water flea) 48 h OECD Test Guideline 202 or Equivalent  
683 mg/lComponent: **pentyl acetate**EC50 Daphnia magna 24 h  
210 mg/lComponent: **2-methylbutyl acetat**EC50 Daphnia magna 48 h OECD Test Guideline 202 or Equivalent  
40.9 mg/lComponent: **Cresol**LC50 Daphnia 48 h Method Not Specified  
33 - 100 mg/l**Acute toxicity to algae**Component: **Ethyl lactate**ErC50 Pseudokirchneriella subcapitata (green algae) 70 h OECD Test Guideline 201 or Equivalent  
2,200 mg/lComponent: **Anisole**Growth rate EC50 Pseudokirchneriella subcapitata (green algae) 96 h  
162 mg/lComponent: **pentyl acetate**EC50 Algae 24 h  
550 mg/l

Component: **2-methylbutyl acetat**  
EC50 Pseudokirchneriella subcapita 96 h  
>466 mg/l

**Toxicity to bacteria**

Component: **Cresol**  
EC0 Pseudomonas putida 0.5 h  
250 mg/l

**Specific concentration limits**

The values listed below represent the percentages of ingredients of unknown toxicity.  
60 - 70 % Acute aquatic toxicity

**Chronic aquatic toxicity****Chronic toxicity to fish**

no data available

**Chronic toxicity to aquatic invertebrates**

no data available

**Toxicity to soil-dwelling organisms**

no data available

**Toxicity to terrestrial plants**

no data available

**Toxicity to other non-mammalian terrestrial species**

no data available

**Persistence and Degradability****Biodegradability**

Component: **Ethyl lactate**

OECD Test Guideline 302  
75 %

**Physico-chemical removability**

no data available

**Bioaccumulative Potential****Bioaccumulation**

no data available

**Mobility in Soil****Partition coefficient: n-octanol/water**

Component: **Anisole**

log Pow: 2.11 No information available.

Component: **pentyl acetate**

log Pow: 2.30

Component: **Diazo Photoactive Compound**

see user defined free text

Component: **Cresol**

log Pow: 1.95 Calculated

**Distribution among environmental compartments**

no data available

**Fate and behaviour in the environment**

no data available

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**13. DISPOSAL CONSIDERATIONS**

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**Precautions**

Dispose of contents/container in accordance with local regulation.

**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.

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.

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**14. TRANSPORT INFORMATION**

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**Classification for ROAD and Rail transport:**

<b>Proper shipping name</b>	RESIN SOLUTION
<b>UN number</b>	UN 1866
<b>Class</b>	3
<b>Packing group</b>	III
<b>Hazard identification No</b>	30

**Classification for SEA transport (IMO-IMDG):**

<b>Proper shipping name</b>	RESIN SOLUTION
<b>UN number</b>	UN 1866
<b>Class</b>	3
<b>Packing group</b>	III

**Classification for AIR transport (IATA/ICAO):**

Consult current IATA regulations prior to shipping by air.

*Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations*

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**15. REGULATORY INFORMATION**

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**China. Inventory of Existing Chemical Substances (IECSC):** All intentional components are listed on the inventory, are exempt, or are supplier certified.**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.

Provisions on the Environmental Administration of New Chemical Substances.

General rule of classification and hazard communication of chemicals (GB 13690)  
 Law on Prevention and Control of Environmental Pollution Caused by Solid Waste.  
 The rule on dangerous chemicals safety management  
 Occupational Exposure Limits for Hazardous Agent in The workshop Chemical Hazardous Agents(GBZ 2.1).  
 LIST OF DANGEROUS GOODS (GB 12268)

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## 16. OTHER INFORMATION

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### Emergency telephone number

Asia-Pacific toll free	+800 2537 8747
Asia-Pacific toll	+65 6542 9595
From Indonesia toll free	+803 65 7576
From Pakistan toll free	+800 11065 2 6542 7115
From Sri Lanka (Colombo) toll free	+430 800 2 6542 7115
USA toll	+1 215 592 3000
European Region toll	+33 (0) 1400 25045

### 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.

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