



# Material Safety Data Sheet

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## 1. PRODUCT AND COMPANY IDENTIFICATION

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UV™26-2.5 POSITIVE DUV PHOTORESIST

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**Supplier** ROHM AND HAAS ELECTRONIC MATERIALS LLC  
A Subsidiary of The Dow Chemical Company  
455 FOREST STREET  
MARLBOROUGH, MA 01752 United States

**For non-emergency information contact:** 215-592-3000

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

**Emergency telephone number**

1 800 424 9300

**Local emergency telephone number**

989-636-4400

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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

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Component	CAS-No.	Concentration
Ethyl lactate	97-64-3	40.0 - 50.0 %
Anisole	100-66-3	20.0 - 30.0 %
Acrylic Copolymer		20.0 - 30.0 %
n-amyl acetate	628-63-7	1.0 - 10.0 %
2-Methyl Butyl Acetate	624-41-9	1.0 - 10.0 %
Aromatic Sulfur Compound		< 1.0 %

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## 3. HAZARDS IDENTIFICATION

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### Emergency Overview

#### Appearance

**Form** liquid  
**Colour** Colorless to amber  
**Odour** Sweet odor

**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 adverse effects to internal organ systems.

**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 consciousness, is unconscious or is convulsing.

**Notes to physician:** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Flash point** 48 °C ( 120.0 °F )

**Lower explosion limit** no data available

**Upper explosion limit** no data available

**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.

### 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
	ACGIH	TWA	50 ppm
	ACGIH	STEL	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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

<b>Form</b>	liquid
<b>Colour</b>	Colorless to amber
<b>Odour</b>	Sweet odor
<b>pH</b>	ca.7
<b>Boiling point/boiling range</b>	150 °C ( 302 °F)
<b>Flash point</b>	48 °C ( 120.0 °F)
<b>Lower explosion limit</b>	no data available
<b>Upper explosion limit</b>	no data available

Component: Ethyl lactate

**Vapour pressure** 1.7 mmHg at 20 °C (68 °F)

Component: Anisole

**Vapour pressure** 9.7 mmHg at 42 °C (108 °F)

Component: n-amyl acetate

**Vapour pressure** 5.0 mmHg at 25 °C (77 °F)

<b>Relative vapour density</b>	Heavier than air.
<b>Water solubility</b>	insoluble
<b>Relative density</b>	1.04
<b>Evaporation rate</b>	Slower than ether
<b>VOC's</b>	860 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),

**polymerisation** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

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*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: **Acrylic Copolymer**

**Acute oral toxicity** LD50 rat > 5,000 mg/kg  
Single application to the rabbit eye produced mild irritation.  
A single application to rabbit skin produced mild irritation.

Component: **n-amyl acetate**

**Acute oral toxicity** LD50 rat >1,600 mg/kg

Component: **2-Methyl Butyl Acetate**

**Acute oral toxicity** LD50 rat 12,306 mg/kg

Component: **Aromatic Sulfur Compound**

**Acute oral toxicity** LD50 rat > 5,000 mg/kg

Component: **Ethyl lactate**

**Acute inhalation toxicity** LC50 rat 4 h 5,400 mg/m<sup>3</sup>

Component: **n-amyl acetate**

**Acute inhalation toxicity** 16,000 mg/m<sup>3</sup>

Component: **2-Methyl Butyl Acetate**

**Acute inhalation toxicity** LC50 rat 4 h >5.2 mg/l

Component: **Ethyl lactate**

**Acute dermal toxicity** LD50 rat > 5,000 mg/kg

Component: **Acrylic Copolymer**

**Acute dermal toxicity** LD50 rat > 5,500 mg/kg

Component: **n-amyl acetate**

**Acute dermal toxicity** LD50 rabbit >17,500 mg/kg

Component: **2-Methyl Butyl Acetate**

**Acute dermal toxicity** LD50 rabbit 8,359 mg/kg

Component: **Aromatic Sulfur Compound**

**Acute dermal toxicity** LD50 rat > 2,000 mg/kg

Component: **Ethyl lactate**

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

Component: **2-Methyl Butyl Acetate**

**Skin irritation** rabbit Moderate irritation.

Component: **Ethyl lactate**

**Eye irritation** Single application to the rabbit eye produced conjunctival irritation.

Component: **2-Methyl Butyl Acetate**

**Eye irritation** rabbit Moderate eye irritation

Component: **Ethyl lactate**

**Reproductive toxicity**

No adverse reproductive effects were observed in experimental animals.

Component: **n-amyl acetate**

**Subchronic toxicity**

Inhalation rat

NOEL: 1,200 mg/kg

none

Component: **n-amyl acetate**

**Reproductive toxicity**

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: **Aromatic Sulfur Compound**

**Mutagenicity**

No mutagenic activity was observed in bacterial cells.

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## 12. ECOLOGICAL INFORMATION

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*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 algae**

Growth rate EC50 Pseudokirchneriella subcapitata (green algae) 96 h  
162 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

### **2-Methyl Butyl Acetate**

**Ecotoxicity effects**

<b>Toxicity to fish</b>	LC50 Fathead minnow (Pimephales promelas) 96 h 69 mg/l
<b>Toxicity to algae</b>	EC50 Pseudokirchneriella subcapita 96 h >466 mg/l
<b>Toxicity to aquatic invertebrates</b>	EC50 Daphnia magna 48 h 40.9 mg/l

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### 13. DISPOSAL CONSIDERATIONS

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**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.

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### 14. TRANSPORT INFORMATION

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#### DOT

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

#### IMO/IMDG

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

*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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#### Workplace Classification

OSHA: Combustible  
Irritant

WHMIS: This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

**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.

**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.

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## 16. OTHER INFORMATION

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### NFPA Hazard Rating

Health	Fire	Reactivity
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.

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