

# MICRO • CHEM

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## MATERIAL SAFETY DATA SHEET

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### SECTION 1. CHEMICAL IDENTIFICATION -----

CHEMICAL NAME: Organic Polymer Solution  
TRADE NAME: NANO™ LOR B Series Resists

PRODUCT #: See Table 1 – Section 9

### SECTION 2. COMPOSITION-----

HAZARDOUS  
INGREDIENTS: Cyclopentanone (CAS: 120-92-3); 65-90%.  
Propylene glycol methyl ether (CAS: 107-98-2); 10-15%

OTHER  
INGREDIENTS: Polyaliphatic imide copolymer (CAS: 123209-67-6); 1-20%  
Proprietary Dye, 0.1 - 2%  
Proprietary Surfactant, <1%

### SECTION 3. HAZARD DATA-----

INFLAMMABILITY: Flammable liquid.  
SKIN CONTACT: May cause skin irritation.  
EYE CONTACT: May cause serious damage to the eyes.  
INGESTION: May be harmful if swallowed.  
INHALATION: Irritating to mucous membranes and upper respiratory tract.  
MUTAGENICITY: Data not available.  
CARCINOGENICITY: Data not available.  
TARGET ORGANS: Eyes, Respiratory, Behavioral, Liver.

### SECTION 4. FIRST AID MEASURES-----

INHALATION: If inhaled, remove to fresh air. If patient has stopped breathing, give artificial respiration. If breathing is difficult give oxygen. Contact physician immediately.

INGESTION: Induce vomiting. Wash out mouth with water if conscious. Get medical attention immediately.

SKIN CONTACT: Rinse with water for 15 minutes while removing contaminated clothing and shoes. Wash affected area with soap and water. Wash contaminated clothing.

EYE CONTACT: Rinse immediately with water, flush for 15 min. lifting eyelids frequently. Get emergency medical assistance.

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### SECTION 5. FIRE FIGHTING MEASURES-----

#### EXTINGUISHING

MEDIA: Dry chemical, carbon dioxide, and foam.

#### SPECIAL FIRE FIGHTING PRECAUTIONS:

Wear self-contained breathing apparatus (SCBA) and personal protective equipment to prevent contact with skin and eyes.

#### UNUSUAL FIRE OR EXPLOSION HAZARDS:

Vapor may travel considerable distance to source of ignition and flash back. Heat will build pressure and may rupture closed containers. Forms explosive mixtures in air. Keep containers cool with water spray.

### SECTION 6. ACCIDENTAL RELEASE PROCEDURES -----

Evacuate Area.

Eliminate all ignition sources.

Wear self-contained breathing apparatus (SCBA), rubber boots, and heavy rubber gloves. Avoid eye or skin contact. Cover with dry absorbent material and collect in closed container for disposal using non-sparking tools. Ventilate area and wash spill sites after material pickup is complete, rinse with water. All clean up should be carried out in accordance with federal, state, and local regulations. If required proper authorities should be notified.

### SECTION 7. STORAGE AND HANDLING PRECAUTIONS-----

STORAGE: Store in tightly closed container in a cool environment away from direct sunlight.

HANDLING: Keep away from heat, sparks, and flames.  
Do not breathe vapors.  
Use only with mechanical exhaust.  
Do not contact with skin, eyes, and clothing.  
Severe eye irritant.  
Avoid prolonged or repeated exposure.  
Wear heavy rubber gloves.  
Wash with soap and water after handling.  
Have safety shower and eye wash available.

### SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION-----

#### RESPIRATORY PROTECTION:

In case of spills, use of self-contained breathing apparatus (SCBA) is recommended.

#### VENTILATION:

Local or general mechanical ventilation is required.

#### SKIN PROTECTION:

Heavy rubber gloves are highly recommended.

#### EYE PROTECTION:

Safety goggles are highly recommended.

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**SECTION 9. PHYSICAL AND CHEMICAL DATA**

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APPEARANCE: Pale yellow  
 ODOR: Slightly sweet  
 BOILING POINT: 118-131 °C (244-268 °F)  
 SPECIFIC GRAVITY: See Table 1 below  
 VAPOR PRESSURE: 9 mm @ 20 °C (68 °F)  
 VAPOR DENSITY: 2.3 (air=1)  
 H<sub>2</sub>O SOLUBILITY: 40-50% @ 20 °C, by wt.  
 FLASH POINT: 30 °C (87 °F) TCC  
 AUTOIGNITION TEMP: 136 °C (278 °F)  
 EXPLOSION LIMITS: 1.6 lower  
 unk. Upper

**Table 1**

Name	Product #	Specific Gravity	Volatiles (% by wt)	VOC (g/L)
LOR 1B	G316703	0.967	97	930
LOR 2B	G316704	0.973	96	925
LOR 3B	G316706	0.980	94	915
LOR 5B	G316708	0.982	92	905
LOR 6B	G316700	0.984	91	900
LOR 7B	G316710	0.988	90	895
LOR 10B	G316711	0.990	89	880
LOR 15B	G316712	0.992	88	870
LOR 20B	G316715	1.002	86	855
LOR 30B	G316719	1.004	85	840
LOR 50B	G316719	1.007	82	820

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**SECTION 10. REACTIVITY DATA**

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STABILITY: Stable  
 INCOMPATIBILITY: Strong Oxidizing Agents, Strong Bases, Strong Reducing Agents, Acid Chlorides, Acid Anhydrides  
 HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide

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**SECTION 11. TOXICITY HAZARDS**

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**ACUTE EFFECTS:**

May be harmful if swallowed, inhaled, or absorbed through the skin.  
Irritating to eyes and respiratory tract. May cause serious damage to the eyes.  
Vapor or mist is irritating to the eyes, mucous membranes and upper respiratory tract.  
Eye and skin contact can cause headache, nausea, vomiting, dizziness, weakness, drowsiness, narcosis, and loss of coordination in humans.  
Causes moderate skin irritation in rabbits.  
Prolonged and/or repeated exposure can cause absorption of harmful amounts of material.

ORAL:	LD50 (mam):	2000 mg/Kg as Cyclopentanone
	LD-50 (rat):	5660 mg/kg as Propylene glycol methyl ether
IRRITATION:	skin:	500 mg - mild as Cyclopentanone
	skin:	500 mg as Propylene glycol methyl ether
	eyes:	100 mg/ 4 sec - severe as Cyclopentanone
	eyes:	230 mg - mild as Propylene glycol methyl ether
TLV:	ACGIH (TWA)	none established
PEL:	OSHA (8hr TWA)	none established

**SECTION 12. ECOLOGICAL DATA**

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As cyclopentanone:

Data not available.

As Propylene glycol methyl ether:

It has a low potential to affect aquatic organisms, a high potential to biodegrade with unacclimated microorganisms from activated sludge, a low potential to affect secondary wasted treatment microbial respiration, a low potential to persist in the environment, and a low potential to bioconcentrate.

The direct instantaneous discharge to a receiving body of water of an amount of this chemical which will rapidly produce, by dilution, a final concentration of 250 mg/l or less is not expected to cause adverse environmental effects.

Oxygen Demand Data:

ThOD: 1.95 g oxygen/g

COD: 1.84 g oxygen/g

BOD-20: 1.14-g oxygen/g

Acute Aquatic Effects Data:

48-h EC-50 (daphnia): 23,300 mg/L

96-h LC-50 (fathead minnow): 20,800 mg/L

Biodegradation: A 28 day test for ready biodegradability using unacclimated microorganisms showed 73.4% degradation of the test article as measured by carbon dioxide evolution and a loss of dissolved organic carbon.

Secondary Waste Treatment Effects: A 3 hour activated sludge respiration inhibition test showed an EC-50 of >1000 mg/L.

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**SECTION 13. DISPOSAL CONSIDERATIONS**

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Burn in an EPA-licensed chemical incinerator equipped with an afterburner and scrubber at an approved waste disposal facility. Observe all federal, state, and local environmental regulations.

**SECTION 14. TRANSPORTATION INFORMATION**

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HAZARD CLASSIFICATION: Flammable Liquid  
SHIPPING NAME: Resin Solution  
UN NUMBER: UN 1866  
PACKING GROUP III

**SECTION 15. REGULATORY INFORMATION**

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HAZARDOUS LISTINGS: All ingredients appear on the TSCA Inventory of Chemical Substances, EINECS, and the Japan Hazardous Chemical Listing.  
SARA Title III: This product IS NOT subject to SARA Title III, Section 313 Reporting Requirements.

Calif. SCAQMD Rule 443.1 VOC's: See Table 1 – Section 9

**SECTION 16. ADDITIONAL PRECAUTIONS AND COMMENTS**

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To the best of our knowledge, the above information is believed to be accurate but does not claim to be all-inclusive and is intended to be used only as a guide. The supplier makes no warranty of any kind, expressed or implied, concerning the use of this product and shall not be held liable for any damage resulting from handling or from contact with the above product. User assumes all risks incident to its use.