

MATERIAL SAFETY DATA SHEET PAGE 1

12 April 2001

SECTION 1. CHEMICAL IDENTIFICATION -----

CHEMICAL NAME: Organic Resin Solution

TRADE NAME: XP SU-8 Series Resists

PRODUCT #: See Table 1 – Section 9

SECTION 2. COMPOSITION-----

INGREDIENTS: Gamma Butyrolactone (CAS: 96-48-0); 22-60%

Mixed Triarylsulfonium/ Hexafluoroantimonate Salt;

(CAS: 89452-37-9)/(CAS: 71449-78-0); 1-5%

Propylene Carbonate (CAS: 108-32-7); 1-5%

Epoxy Resin (CAS: 28906-96-9); 35-75%

SECTION 3. HAZARD DATA-----

INFLAMMABILITY: Combustible liquid.

SKIN CONTACT: May cause skin irritation.

EYE CONTACT: Severe eye irritant.

INGESTION: May be harmful if swallowed in large quantities.

INHALATION: May cause irritation..

MUTAGENICITY: Not known to be mutagenic.

CARCINOGENICITY: Not considered carcinogenic by NTP, IARC and OSHA

TARGET ORGANS: Eyes, Epidermis.

SECTION 4. FIRST AID MEASURES-----

INHALATION: No occupational exposure limits have been developed for this material. Where exposure through inhalation may occur from use, NIOSH approved respiratory equipment is recommended.

INGESTION: If a large quantity swallowed, give lukewarm water. DO NOT induce vomiting. Risk of damage to lungs exceeds poisoning risk. 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. Prompt action is essential.

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SECTION 5. FIRE FIGHTING MEASURES-----

EXTINGUISHING

MEDIA: Dry chemical, carbon dioxide, foam, water spray, and fog.

SPECIAL FIRE FIGHTING

PRECAUTIONS: Do not enter fire area without proper protection. Fight fire from a safe distance/protected location. Heat may build enough pressure to rupture closed containers, spreading fire, increasing risk of burns/injuries. Use water spray/fog for cooling. Avoid frothing, steam explosion. Burning liquid may float on water. Although water-soluble, may not be practical to extinguish fire by water dilution. Notify authorities immediately if liquid enters sewer, public waters.

UNUSUAL FIRE OR

EXPLOSION HAZARDS: Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point.

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: Use only under yellow light.

Keep away from heat, sparks, and flames.

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: Rubber gloves are recommended.

EYE PROTECTION: Safety goggles are highly recommended.

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SECTION 9. PHYSICAL AND CHEMICAL DATA-----

APPEARANCE: Pale yellow to clear

ODOR: Slightly sweet

BOILING POINT: 204 °C (400 °F)

SPECIFIC GRAVITY: See Table 1 below

VAPOR PRESSURE: 2 mm @ 20 °C (68 °F)

H₂O SOLUBILITY: See Table 1 below

% VOLATILES: See Table 1 below

EVAPORATION RATE: 1 (BuAc=1)

FLASH POINT: 98 °C (209 °F) TCC

AUTOIGNITION TEMP: 437 °C (820 °F)

EXPLOSION LIMITS: 3.6 lower

16 upper

Table 1

Name	Product#	Specific Gravity (g/ml)	Volatiles (% by wt.)	H2O Solubility (% by wt)	VOC (g/L)
SU8-2	Y131240	1.123	60.5	60.5	680
SU8-5	Y131252	1.164	45-50	45-50	560
SU8-10	Y131259	1.187	35-40	35-40	490
SU8-25	Y131263	1.200	35-40	35-40	440
SU8-50	Y131269	1.219	30-35	30-35	380
SU8-100	Y131273	1.233	20-30	20-30	330
SU8-250	Y131274	1.236	20-30	20-30	320
SU8-500+	Y131275	1.237	20-30	20-30	310

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SECTION 10. REACTIVITY DATA -----

STABILITY: Stable

INCOMPATIBILITY: Strong Oxidizing Agents, Strong Bases, Strong Acids

HAZARDOUS POLYMERIZATION: Will not occur

HAZARDOUS COMBUSTION OR

DECOMPOSITION PRODUCTS: Carbon Monoxide, Aldehydes, Acids, Hydrogen Fluoride Gas.

SECTION 11. TOXICITY HAZARDS-----

Gamma Butyrolactone

In animal studies, due to the rate of dermal absorption of GBL, dermal toxicity is assumed to be essential equal to oral toxicity. In humans, oral ingestion of solutions containing high concentrations of GBL has caused reversible coma.

Mixed Triarylsulfonium/Hexafluoroantimonate Salt/Propylene Carbonate

This material was mutagenic in the Ames bacterial assay. It is inactive, however, in the in vivo mouse micronucleus test.

SECTION 12. ECOLOGICAL DATA-----

No data available at this time.

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SECTION 13. DISPOSAL CONSIDERATIONS-----

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-----

HAZARD CLASSIFICATION: Not Regulated

SHIPPING NAME: Not Regulated

UN NUMBER: Not Regulated

PACKING GROUP Not Regulated

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SECTION 15. REGULATORY INFORMATION-----

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-----

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.