

MICRO • CHEM

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MATERIAL SAFETY DATA SHEET

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SECTION 1. CHEMICAL IDENTIFICATION

CHEMICAL NAME: Organic Resin Solution
TRADE NAME: SU-8 3000 Series Resists
PRODUCT #: See Table 1 – Section 9

SECTION 2. COMPOSITION

INGREDIENTS: Cyclopentanone (CAS: 120-92-3); 20-60%
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); 35-60%
Formaldehyde Polymer (CAS: 9003-36-5); 0-30%
Cycloaliphatic Epoxy Resin (CAS: 244772-00-7); 0-30%
Proprietary polyglycidyl ether; 0-5%
Proprietary silane; 0-2%
Proprietary surfactant; 0-1%

SECTION 3. HAZARD DATA

INFLAMMABILITY: Flammable liquid.
SKIN CONTACT: Irritant.
EYE CONTACT: Severe eye irritant.
INGESTION: Harmful if ingested.
INHALATION: Harmful if inhaled.
MUTAGENICITY: Not known to be mutagenic.
CARCINOGENICITY: Not considered carcinogenic by NTP, IARC, ACGIH and OSHA
TARGET ORGANS: Eyes, Skin, Respiratory System, Nervous System

SECTION 4. FIRST AID MEASURES

INHALATION: Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention.
INGESTION: Do not induce vomiting unless instructed to do so by a physician. Wash out mouth with water and keep at rest. Seek immediate medical attention.
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. Seek medical attention.

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SECTION 5. FIRE FIGHTING MEASURES

**EXTINGUISHING
MEDIA:**

Dry chemical, carbon dioxide, alcohol foam, and universal foam.

**SPECIAL FIRE FIGHTING
PRECAUTIONS:**

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Remove all ignition sources if it can be done safely.

**UNUSUAL FIRE OR
EXPLOSION HAZARDS:**

Product will burn under fire conditions. Containers may explode (due to build-up of pressure) when exposed to extreme heat. Vapors may travel a considerable distance to a source of ignition and flash back along vapor trail.

SECTION 6. ACCIDENTAL RELEASE PROCEDURES

**EVACUATION
PROCEDURES & SAFETY:**

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

**CLEANUP & DISPOSAL
OF SPILL:**

Absorb with an inert absorbent. Sweep up and place in an appropriate closed container (see Section 7). Clean up residual material by washing area with water. Collect washings for disposal.

**ENVIRONMENTAL &
REGULATORY REPORTING:**

Do not flush to drain. If required proper authorities should be notified.

SECTION 7. STORAGE AND HANDLING PRECAUTIONS

STORAGE:

Store in tightly closed container in a cool, dry, well-ventilated environment away from direct sunlight and ignition sources. Recommended container materials are polyethylene or glass.

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 contact with skin.
Do not breathe vapors or mist.
Wear heavy rubber gloves.
Wash with soap and water after handling.
Have safety shower and eye wash available.

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SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**RESPIRATORY
PROTECTION:**

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

VENTILATION:

General area dilution/exhaust ventilation.

SKIN PROTECTION:

Skin contact should be minimized through the use of gloves and suitable long-sleeved clothing.

EYE PROTECTION:

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles.

SECTION 9. PHYSICAL AND CHEMICAL DATA

APPEARANCE: Pale yellow to clear
ODOR: Pleasant
BOILING POINT: Cyclopentanone: 130°C (266°F)
SPECIFIC GRAVITY: See Table 1
VAPOR PRESSURE: 8.7 mm @ 20 °C (68 °F)
H₂O SOLUBILITY: No data
% VOLATILES: See Table 1
EVAPORATION RATE: 1 (BuAc=1)
FLASH POINT: Cyclopentanone: 30°C (86°F) TCC
AUTOIGNITION TEMP: Cyclopentanone: 550°C (1022°F)
FLAMMABILITY LIMITS: 1.3 lower (vol./vol. %)
Unk. upper

Table 1

Name	Product#	Specific Gravity	Volatiles (% by wt.)	VOC (g/L)
SU-8 3005	Y311049	1.075	48-52	538
SU-8 3010	Y311060	1.106	38-42	442
SU-8 3025	Y311072	1.143	26-30	320
SU-8 3035	Y311074	1.150	24-28	300
SU-8 3050	Y311075	1.153	22-27	288

SECTION 10. REACTIVITY DATA

STABILITY:

Stable

INCOMPATIBILITY:

Strong Oxidizing Agents, Strong Bases, Strong Acids,
Strong Reducing Agents, Iron, Hydrazine

**HAZARDOUS POLYMERIZATION:
HAZARDOUS COMBUSTION OR**

May occur. Avoid extreme pH.

DECOMPOSITION PRODUCTS:

Oxides of carbon

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SECTION 11. TOXICITY HAZARDS

As cyclopentanone:

Acute Eye Irritation: eye irritation, rabbit. Severely irritating.
Acute Skin Irritation: skin irritation, rabbit. Mildly irritating.
Acute Dermal Toxicity: LD50 – lethal dose 50% of test species, >2000 mg/kg, rabbit.
Acute Respiratory Irritation: no test data found for product.
Acute Inhalation Toxicity: LC50 – lethal concentration 50% of test species, >19.5 mg/l/4 hr, rat.
Acute Oral Toxicity: LD50 – lethal dose 50% of test species, 1180 mg/kg, rat.

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

Ecotoxicological information:

EC50 – effective concentration 50% of test species, 100mg/l/48 hr, Daphnia.
LC50 – lethal concentration 50% of test species, >100 mg/l/96 hr, fish.
EC50 – effective concentration 50% of test species, >100mg/l/72 hr, fresh water algae: Scenedesmus subspicatus.

SECTION 13. DISPOSAL CONSIDERATIONS

Comply with applicable local, state or international regulations regarding the proper disposal of this material and/or containers.

SECTION 14. TRANSPORTATION INFORMATION

HAZARD CLASSIFICATION: Flammable Liquid
SHIPPING NAME: Resin Solution
UN NUMBER: UN1866
PACKING GROUP: III

SECTION 15. REGULATORY INFORMATION

EUROPEAN INFORMATION

EINECS LISTED

EC Nos: Cyclopentanone 204-435-9; Propylene Carbonate 203-572-1;

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Mixed Triarylsulfonium/ Hexafluoroantimonate Salt 403-500-0

RISK & SAFETY PHRASES

R10 Flammable
R36/38 Irritating to eyes and skin
R43 May cause sensitization by skin contact
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
S2 Keep out of the reach of children
S23 Do not breathe gas/fumes/vapour/spray
S24 Avoid contact with the skin
S37 Wear suitable gloves
S60 This material and its container must be disposed of as hazardous waste
S61 Avoid release to the environment. Refer to special instructions/safety data sheets

INDICATIONS OF DANGER

Xi Irritant
N Environmentally Dangerous

US AND INTERNATIONAL INFORMATION

HAZARDOUS LISTINGS: All ingredients appear on the TSCA Inventory of Chemical Substances, the Japan Hazardous Chemical Listing and are EINECS listed or are exempt from EINECS.

SARA Title III: This product IS NOT subject to SARA Title III, Section 313 Reporting Requirements.

SECTION 16. ADDITIONAL PRECAUTIONS AND COMMENTS-----

National Fire Protection Association Hazard Ratings – NFPA:

- 2 Health Hazard Rating
- 3 Flammability Rating
- 0 Reactivity Rating

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.

MSDS Revision Information:

- A) Section 8 – Revised Respiratory Protection information.
- B) Section 15 – Added that ingredients are EINECS listed or are exempt from EINECS.
- C) Section 7 – Removed statement “Store and Transfer under a blanket of dry inert gas”.