

**MICRO • CHEM**  
**SAFETY DATA SHEET**

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Rev. Date: 13 April 2009

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION** -----

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

SUPPLIER:               MicroChem Corporation  
                              90 Oak Street, PO Box 426  
                              Newton, MA 02464-0002

TELEPHONE:           (617) 965-5511  
FAX:                    (617) 965-5818  
CHEMTREC USA  
EMERGENCY #:         (800) 424-9300  
CHEMTREC INTL  
EMERGENCY #:         (703) 527-3887  
MSDS DATE:           18 December 2008  
REVISION DATE:       13 April 2009

**SECTION 2. HAZARDS IDENTIFICATION** -----

**Hazardous Classification**

Acute hazards aquatic env – Category 2  
Acute toxicity (oral) - Category 4  
Acute toxicity (inhalation – gas/vapour) – Category 4  
Flammable liquids - Category 3  
Germ cell mutagenicity – Category 2  
Serious eye damage/eye irritation - Category 2A  
Skin corrosion/irritation - Category 2  
Skin Sensitizer – Category 1  
Target organ systemic toxicant single exp - Category 3



Signal Word: **WARNING!**

**Hazards**

Toxic to aquatic life.  
Flammable liquid and vapour  
Causes serious eye irritation.  
Causes skin irritation.  
Harmful if inhaled.  
Harmful if swallowed.  
May cause an allergic skin reaction.  
May cause drowsiness and dizziness.  
May cause respiratory irritation.  
Suspected of causing genetic defects.

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## Precautions

Avoid release to the environment.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wash hands thoroughly after handling.  
Contaminated work clothing should not be allowed out of the workplace.  
Do not breathe mist or vapors.  
Keep away from heat, sparks and open flame. - No smoking.  
Use explosion-proof equipment.  
Wear protective gloves and eye/face protection.  
Take precautionary measures against static discharge.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
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.  
Take off contaminated clothing as wash before re-use.  
Rinse mouth.  
Call a POISON CENTRE or doctor/physician if you feel unwell.  
If skin irritation or rash occurs, seek medical advice/attention.  
Use extinguishing measures that are appropriate to local circumstances

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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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); 35-80%  
Formaldehyde Polymer (CAS: 9003-36-5); 1-30%  
Cycloaliphatic Epoxy Resin (CAS: 244772-00-7); 1-30%  
Proprietary polyglycidyl ether; <5%  
Proprietary silane; <2%  
Proprietary surfactant; <1%

## SECTION 4. FIRST AID MEASURES

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INHALATION: If respiratory irritation or distress occurs remove victim to fresh air and 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: In case of contact, immediately wash with plenty of soap and water for at least 15 minutes. Seek medical attention. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.  
EYE CONTACT: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. 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 MEASURES**

**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. HANDLING AND STORAGE**

**PRECAUTIONS:** Store container tightly closed in well-ventilated place.

**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/PERSONAL PROTECTION-----

OCCUPATIONAL  
 EXPOSURE LIMITS: None Established

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 PROPERTIES-----

APPEARANCE: Pale yellow to clear  
 ODOR: Pleasant  
 BOILING POINT: Cyclopentanone: 130°C (266°F)  
 SPECIFIC GRAVITY: See Table I  
 VAPOR PRESSURE: 8.7 mm @ 20 °C (68 °F)  
 H<sub>2</sub>O SOLUBILITY: No data  
 % VOLATILES: See Table I  
 EVAPORATION RATE: I (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. STABILITY AND REACTIVITY-----

STABILITY: Stable  
 INCOMPATIBILITY: Strong Oxidizing Agents, Strong Bases, Strong Acids, Strong Reducing Agents, Iron, Hydrazine  
 HAZARDOUS POLYMERIZATION: May occur. Avoid extreme pH.  
 HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Oxides of carbon.

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## SECTION 11. TOXICOLOGICAL INFORMATION

**Routes of Entry:** Inhalation, ingestion, eye and skin contact

**Symptoms of Exposure:** Causes severe eye irritation. Causes skin irritation. May cause skin sensitization. May cause upper respiratory tract irritation, central nervous system depression, shortness of breath, drowsiness and confusion.

### **Acute Toxicity**

#### **Acute Oral Toxicity**

Component: Cyclopentanone  
LD50 rat 1180 mg/kg  
Component: Propylene Carbonate  
LD50 rat 20,700 mg/kg  
Component: Proprietary Polyglycidyl Ether  
LD50 rat >2000 mg/kg  
Component: Cycloaliphatic Epoxy Resin  
LD50 rat 2000 mg/kg  
Component: Proprietary Silane  
LD50 rat 7010 mg/kg  
Component: Proprietary Surfactant  
LD50 rat >5000 mg/kg  
Component: Epoxy Resin  
LD50 rat >2000 mg/kg

#### **Acute Dermal Toxicity**

Component: Cyclopentanone  
LD50 rabbit >5000 mg/kg  
Component: Propylene Carbonate  
LD50 Rabbit > 20,000 mg/kg  
Component: Epoxy Resin  
LD50 rat >2000 mg/kg

#### **Acute Inhalation Toxicity**

Component: Cyclopentanone  
LC50 rat 19.5 mg/l  
Component: Propylene Carbonate  
No data found  
Component: Proprietary Silane  
LD50 rat 5.3 mg/l

### **Specific Concentration Limits**

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

27% Acute oral toxicity  
35% Acute dermal toxicity  
38% Acute inhalation toxicity

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**Skin corrosion/irritation**

Component: Cyclopentanone  
Acute Skin Irritation: skin irritation, 500mg, rabbit. Mildly irritating

Component: Propylene Carbonate  
Acute Skin Irritation: Moderate skin irritant

Component: Mixed Triarylsulfonium/ Hexafluoroantimonate Salt  
Acute Skin Irritation: Slight skin irritation

Component: Proprietary Polyglycidyl Ether  
Acute Skin Irritation: no skin irritation

Component: Cycloaliphatic Epoxy Resin  
Acute Skin Irritation: Causes skin irritation

Component: Proprietary Surfactant  
Acute Skin Irritation: No skin irritation based on animal studies

Component: Epoxy Resin  
Acute Skin Irritation: Expected to cause skin irritation

Component: Formaldehyde Polymer  
Acute Skin Irritation: Causes skin irritation

**Serious eye damage/eye irritation**

Component: Cyclopentanone  
Acute Eye Irritation: eye irritation, 100mg, rabbit. Severely irritating.

Component: Propylene Carbonate  
Acute Eye Irritation: Moderate eye irritation

Component: Mixed Triarylsulfonium/ Hexafluoroantimonate Salt  
Acute Eye Irritation: Eye Irritant

Component: Proprietary Polyglycidyl Ether  
Acute Skin Irritation: Causes slight transient irritation

Component: Cycloaliphatic Epoxy Resin  
Acute Skin Irritation: Causes eye irritation

Component: Proprietary Surfactant  
Acute Skin Irritation: No eye irritation based on animal studies

Component: Epoxy Resin  
Acute Skin Irritation: Expected to cause eye irritation

Component: Formaldehyde Polymer  
Acute Skin Irritation: Causes eye irritation

**Respiratory or Skin Sensitisation**

Component: Cyclopentanone  
Skin sensitization – guinea pig – not a sensitizer  
Skin sensitization – human – not a sensitizer

Component: Propylene Carbonate  
Skin sensitization - Did not induce skin sensitization in human patch tests.

Component: Mixed Triarylsulfonium/ Hexafluoroantimonate Salt  
Skin sensitization: May cause skin sensitization

**Carcinogenicity**

Component: Cyclopentanone  
Not considered carcinogenic by NTP, IARC, ACGIH or OSHA.

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**Germ Cell Mutagenicity**

Component: Cyclopentanone  
Ames Test – negative with and without metabolic activation  
Component: Cycloaliphatic Epoxy Resin  
Ames Test- negative with and without metabolic activation  
Component: Proprietary Silane  
In vivo tests did not show mutagenic activity. In Vitro tests showed mutagenic activity.  
Component: Mixed Triarylsulfonium/ Hexafluoroantimonate Salt  
Ames Test - This material was mutagenic in the Ames bacterial assay. It is inactive, however, in the in vivo mouse micronucleus test.  
Component: Epoxy Resin  
Ames Test – This material was mutagenic in the Ames bacterial assay.

**Specific Target Organ Systemic Toxicity (single exposure)**

Component: Cyclopentanone  
Central Nervous system

**Specific Target Organ Systemic Toxicity (repeated exposure)**

Component: Cyclopentanone  
Central Nervous System

**Toxicity to Reproduction**

Component: Cyclopentanone  
No adverse effects to reproduction or adverse developmental effects known.

**Aspiration Hazards**

No data found.

**SECTION 12. ECOLOGICAL INFORMATION**

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**Acute aquatic toxicity****Acute toxicity to fish**

Component: Cyclopentanone  
48 hr LC50 *Leuciscus idus melanotus*: 2950 mg/L  
Component: Propylene Carbonate  
96 hr LC50 *Cyprinus Carpi*: >1000 mg/L  
Component: Proprietary Silane  
96 hr LC50 *Oncorhynchus mykiss* (rainbow trout): 237 mg/L  
Component: Epoxy Resin  
LC50 Fish: >100 mg/L

**Acute toxicity to aquatic invertebrates**

Component: Cyclopentanone  
24 hr EC50 *Daphnia magna*: 1435 mg/L  
Component: Propylene Carbonate  
48 hr EC50 *Daphnia magna*: >500 mg/L  
Component: Proprietary Silane  
48hr EC50 *Daphnia magna*: 324 mg/L

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Component: Epoxy Resin  
LC50 Invertebrate: >100 mg/L

**Acute toxicity to algae**

Component: Cyclopentanone  
72 hr EC50 *Scenedesmus subspicatus* >100 mg/l

Component: Propylene Carbonate  
72 hr EC50 green algae >500 mg/l

Component: Proprietary Silane  
168hr EC50 Freshwater algae: 119 mg/L

Component: Epoxy Resin  
LC50 Algae: >100 mg/L

**Specific concentration limits**

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

35% Acute aquatic toxicity – fish

35% Acute aquatic toxicity – aquatic invertebrates

35% Acute aquatic toxicity - algae

**Chronic aquatic toxicity**

Component: Mixed Triarylsulfonium/ Hexafluoroantimonate Salt-Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Avoid release to the environment.

**Chronic toxicity to fish**

No data found

**Chronic toxicity to aquatic invertebrates**

No data found

**Chronic toxicity to algae**

No data found

**Persistence/Degradability**

Component: Cyclopentanone  
Inherently biodegradable

**Bioaccumulation**

Component: Cyclopentanone  
Not expected to bioaccumulate

**Mobility**

Component: Cyclopentanone  
No data found

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**SECTION 13. DISPOSAL CONSIDERATIONS**

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**Precautions**

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied. Dispose of contents/container in accordance with local regulation.



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## Disposal

Comply with applicable local, state or international regulations regarding the proper disposal of this material and/or containers. Dispose of contents/container in accordance with local 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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### US AND INTERNATIONAL INFORMATION

Chemical Inventories: All ingredients appear on the TSCA Inventory of Chemical Substances or are compliant with TSCA regulations, EINECS or are compliant with EINECS regulations and the Japan Hazardous Chemical Listing.

SARA Title III: This product contains a chemical subject to SARA Title III, Section 313 Reporting Requirements:

Mixed Triarylsulfonium/ Hexafluoroantimonate Salt;  
(CAS: 89452-37-9)/(CAS: 71449-78-0)

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

## SECTION 16. OTHER INFORMATION

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National Fire Protection Association Hazard Ratings -- NFPA:

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

For additional information contact: [productsafety@microchem.com](mailto:productsafety@microchem.com)

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: REVISED Toxicological information for epoxy resin. Updated GHS classification.

