

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 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: 06 November 2008
 REVISION DATE: 13 April 2009

SECTION 2. HAZARDS IDENTIFICATION -----

Hazardous Classification

Acute hazards aquatic env – Category 2
 Acute toxicity (inhalation – gas/vapour) – Category 3
 Acute toxicity (oral) - Category 4
 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: **DANGER!**

Hazards

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

Precautions

Avoid release to the environment.
 Wear eye/face protection.
 Do not eat, drink or smoke when using this product.

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Wash hands thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves.
Do not breathe mist or vapors.
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.
Take off contaminated clothing and wash before re-use.
Contaminated clothing should not be allowed out of the workplace.
IF ON SKIN: Wash with plenty of soap and water.
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

INGREDIENTS: Gamma Butyrolactone (CAS: 96-48-0); 22-60%
 Mixed Triarylsulfonium/ Hexafluoroantimonate Salt;
 (CAS: 89452-37-9)/(CAS: 71449-78-0) See Table 1, Section 9
 Propylene Carbonate (CAS: 108-32-7); 1-5%
 Epoxy Resin (CAS: 28906-96-9); 35-75%

SECTION 4. FIRST AID MEASURES

INHALATION: Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention.
INGESTION: Rinse mouth and then drink plenty of water. Do not induce vomiting. Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Get immediate medical attention.
SKIN CONTACT: Wash affected area with soap and water. Remove contaminated clothing. Get immediate medical attention.
EYE CONTACT: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Get immediate medical attention.

SECTION 5. FIRE-FIGHTING MEASURES

EXTINGUISHING
MEDIA: Dry chemical, carbon dioxide, foam, water spray and fog.
SPECIAL FIRE FIGHTING
PRECAUTIONS: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.
UNUSUAL FIRE OR
EXPLOSION HAZARDS: Explosion hazard is low when exposed to heat or flames.

SECTION 6. ACCIDENTAL RELEASE MEASURES

EVACUATION
PROCEDURES & SAFETY: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

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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 locked up. Store container tightly closed in well-ventilated place.

STORAGE: Store in tightly closed container in a cool environment away from direct sunlight. Recommended container materials are glass or HDPE.

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/PERSONAL PROTECTION

OCCUPATIONAL

EXPOSURE LIMITS: None Established.

RESPIRATORY
PROTECTION:

Under normal conditions, use of Air-purifying (half-mask/full-face) respirator with cartridges/canisters approved for use against organic vapors, dust, mists and fumes is recommended.

VENTILATION: General area dilution/exhaust ventilation.

SKIN PROTECTION: Skin contact should be minimized through the use of gloves (butyl, FEP Teflon) 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: Faint to mild
BOILING POINT: 204 °C (400 °F)
SPECIFIC GRAVITY: See Table 1 below
VAPOR PRESSURE: 0.3 mmHg @ 20 °C (68 °F)
H₂O SOLUBILITY: See Table 1 below
% VOLATILES: See Table 1 below
EVAPORATION RATE: 1 (BuAc=1)

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FLASH POINT: 100 °C (212 °F) DIN 51758
 AUTOIGNITION TEMP: 455 °C (851 °F)
 EXPLOSION LIMITS: 3.6% (V) lower
 15.6% (V) upper

Table 1

Name	Product#	Specific Gravity (g/ml)	Volatiles (% by wt.)	H ₂ O Solubility (% by wt)	VOC (g/L)	SbF ₆ Salt (% by wt)	Sb (% by wt)
SU8-2	Y131240	1.123	60.5	60.5	680	1.9	<1.0%
SU8-5	Y131252	1.164	45-50	45-50	560	2.5	<1.0%
SU8-10	Y131259	1.187	35-40	35-40	490	2.8	<1.0%
SU8-25	Y131263	1.200	35-40	35-40	440	3.0	<1.0%
SU8-40	Y131265	1.210	33-37	33-37	425	3.1	<1.0%
SU8-50	Y131269	1.219	30-35	30-35	380	3.3	<1.0%
SU8-100	Y131273	1.233	20-30	20-30	330	3.5	<1.0%
SU8-250	Y131274	1.236	20-30	20-30	320	2.2	<1.0%
SU8-500+	Y131275	1.237	20-30	20-30	310	1.5	<1.0%

SECTION 10. STABILITY AND REACTIVITY-----

STABILITY: Stable
 INCOMPATIBILITY: Strong Oxidizing Agents, Acids, Bases, Mineral Acids
 HAZARDOUS POLYMERIZATION: Will not occur
 HAZARDOUS COMBUSTION OR
 DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide, Nitrogen oxides,
 Hydrogen Fluoride, Sulfur oxides, oxides of
 phosphorous, Antimony oxide.

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. May be harmful if inhaled or swallowed.

Acute Toxicity**Acute Oral Toxicity**

Component: Gamma Butyrolactone

LD50 rat 1582 mg/kg

Component: Propylene Carbonate

LD50 rat 20,700 mg/kg

Component: Epoxy Resin

LD50 rat: >2,000 mg/kg

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Acute Dermal Toxicity

Component: Gamma Butyrolactone
LD50 rabbit >5000 mg/kg
Component: Propylene Carbonate
LD50 Rabbit > 20,000 mg/kg
Component: Epoxy Resin
LD50 Rabbit >2,000 mg/kg

Acute Inhalation Toxicity

Component: Gamma Butyrolactone
LC50 rat >5.3 mg/l
Component: Propylene Carbonate
No data found
Component: Epoxy Resin
LC50 Rat >5.0 mg/l

Specific Concentration Limits

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

8% Acute oral toxicity
8% Acute dermal toxicity
8% Acute inhalation toxicity

Skin corrosion/irritation

Component: Gamma Butyrolactone
Acute Skin Irritation: Not a skin irritant
Component: Propylene Carbonate
Acute Skin Irritation: Moderate skin irritant
Component: Mixed Triarylsulfonium/ Hexafluoroantimonate Salt
Acute Skin Irritation: Slight skin irritation
Component: Epoxy Resin
Acute Skin Irritation: Skin irritant

Serious eye damage/eye irritation

Component: Gamma Butyrolactone
Acute Eye Irritation: Eye Irritant
Component: Propylene Carbonate
Acute Eye Irritation: Moderate eye irritation
Component: Mixed Triarylsulfonium/ Hexafluoroantimonate Salt
Acute Eye Irritation: Eye Irritant
Component: Epoxy Resin
Acute Eye Irritation: Eye Irritant

Respiratory or Skin Sensitisation

Component: Gamma Butyrolactone
Skin sensitization: Did not cause skin sensitization in human patch tests.
Component: Propylene Carbonate
Skin sensitization: Does not induce skin sensitization
Component: Mixed Triarylsulfonium/ Hexafluoroantimonate Salt
Skin sensitization: May cause skin sensitization

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Component: Epoxy Resin
Skin sensitization: May cause skin sensitization

Carcinogenicity

Component: Gamma Butyrolactone
Based on the weight of evidence, this chemical is not carcinogenic.

Germ Cell Mutagenicity

Component: Gamma Butyrolactone
Not a mutagen
Component: Propylene Carbonate
Negative Ames with and without metabolic activation.
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: Gamma Butyrolactone
Central Nervous system

Specific Target Organ Systemic Toxicity (repeated exposure)

Component: Gamma Butyrolactone
Central Nervous System

Toxicity to Reproduction

Component: Gamma Butyrolactone
No adverse effects to reproduction or adverse developmental effects known.

Aspiration Hazards

No data found.

SECTION 12. ECOLOGICAL INFORMATION

Acute aquatic toxicity

Acute toxicity to fish

Component: Gamma Butyrolactone
96 hr LC50 Golden Orfe: >220-<460 mg/L
Component: Propylene Carbonate
96-h LC50 (Cyprinus carpio): >1000 mg/L
Component: Epoxy Resin
LC50 >100 mg/L (estimated)

Acute toxicity to aquatic invertebrates

Component: Gamma Butyrolactone
48 hr EC50 Daphnia magna: >500 mg/L
Component: Propylene Carbonate
48 hr EC50 Daphnia magna: >500 mg/L

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Component: Epoxy Resin
LC50 >100 mg/L (estimated)

Acute toxicity to algae

Component: Gamma Butyrolactone

96 hr EC50 Green Algae 79 mg/l

Component: Propylene Carbonate

72 hr EC50 green algae >500 mg/l

Component: Epoxy Resin

LC50 >100 mg/L (estimated)

Specific concentration limits

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

8% Acute aquatic toxicity – fish

8% Acute aquatic toxicity – aquatic invertebrates

8% 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: Gamma Butyrolactone

Biodegradable

Component: Epoxy Resin

Expected to not be readily biodegradable

Bioaccumulation

Component: Gamma Butyrolactone

Not expected to bioaccumulate

Component: Epoxy Resin

Has the potential to bioaccumulate

Mobility

Component: Gamma Butyrolactone

No data found

SECTION 13. DISPOSAL CONSIDERATIONS

Precautions

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied.

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Dispose of contents/container in accordance with local regulation.

Disposal

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

SECTION 14. TRANSPORTATION INFORMATION

HAZARD CLASSIFICATION: Not Regulated
SHIPPING NAME: Not Regulated
UN NUMBER: Not Regulated
PACKING GROUP: Not Regulated

SECTION 15. REGULATORY INFORMATION

US AND INTERNATIONAL INFORMATION

Chemical Inventories: TSCA (US) – Components are listed.
EINECS/ELINCS/NLP (EU) – Components are listed or exempt.
China – Components are listed.
Japan – Components are listed or comply with inventory requirements.
DSL/NDSL (Canada) – Components are listed.
AICS (Australia) – Components are listed.

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

National Fire Protection Association Hazard Ratings – NFPA:

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

For additional information contact: 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.

