

1 Identification of the substance/mixture and of the company· **Product identifier**· **Trade name:** *SU-8 2000 Series Resists*· **Product number:***Y111004, Y111007, Y111014, Y111022, Y111029, Y111045, Y111053, Y111058, Y111064, Y111069, Y111070, Y111072, Y111074, Y111075, Y111077*· **Application of the substance / the preparation** *Photoresist*· **Details of the supplier of the safety data sheet**· **Manufacturer/Supplier:***MicroChem Corp.
90 Oak Street
P.O. Box 426
Newton, MA 02464-0002 USA*· **Information department:***Product Safety
Email: productsafety@microchem.com*· **Emergency telephone number:***MicroChem Corp : 617-965-5511
Chemtree USA Emergency : 800-424-9300
Chemtree International Emergency : 703-527-3887***2 Hazards identification**· **Classification of the substance or mixture***GHS02 Flame**Flam. Liq. 3 H226 Flammable liquid and vapor.**GHS08 Health hazard**Muta. 2 H341 Suspected of causing genetic defects.**GHS09 Environment**Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.**GHS07**Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

Acute Tox. 5 H303 May be harmful if swallowed.
Acute Tox. 5 H313 May be harmful in contact with skin.*· **Label elements**· **GHS label elements** *The product is classified and labelled according to the Globally Harmonized System (GHS).**(Contd. on page 2)*

Trade name: SU-8 2000 Series Resists

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· Hazard pictograms



GHS02 GHS07 GHS08 GHS09

· Signal word Warning

· Hazard-determining components of labelling:

Epoxy resin

Triarylsulfonium hexafluoroantimonate salt

Aromatic sulfonium hexafluoroantimonate salt

· Hazard statements

H226 Flammable liquid and vapor.

H303 May be harmful if swallowed.

H313 May be harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H411 Toxic to aquatic life with long lasting effects.

· Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)



Health = 2

Fire = 3

Reactivity = 0

· HMIS-ratings (scale 0 - 4)



HEALTH 2 Health = 2

FIRE 3 Fire = 3

REACTIVITY 0 Reactivity = 0

· Other hazards

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

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3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

28906-96-9	Epoxy resin ⚠ Muta. 2, H341; ⚠ Eye Irrit. 2A, H319; Skin Sens. 1, H317	3-75%
120-92-3	cyclopentanone ⚠ Flam. Liq. 3, H226; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319	15-96%
108-32-7	propylene carbonate ⚠ Eye Irrit. 2, H319	0.1-5%
89452-37-9	Triarylsulfonium hexafluoroantimonate salt ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Skin Sens. 1, H317	0.05-2.5%
71449-78-0	Aromatic sulfonium hexafluoroantimonate salt ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Skin Sens. 1, H317	0.05-2.5%

4 First aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air or oxygen; call for doctor.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Do not induce vomiting unless instructed to do so by a physician. Wash out mouth with water and keep person at rest. Seek immediate medical attention.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
Containers may explode due to pressure increase when container is exposed to extreme heat. Vapors may travel a considerable distance to a source of ignition and flash back along vapor trail.
- **Advice for firefighters**
- **Protective equipment:** Wear SCBA.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any drains.
Inform respective authorities in case of seepage into water course or sewage system.

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Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling:****Precautions for safe handling**

Ensure good ventilation/exhaust at the workplace.

Prevent formation of aerosols.

Use only under yellow light

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and containers:**

Due to photo-sensitivity, store product in brown-glass or stainless steel receptacles.

Store in a cool location.

Information about storage in one common storage facility: Not required.**Further information about storage conditions:**

Keep container tightly sealed.

Store in dry conditions.

Specific end use(s) No further relevant information available.**8 Exposure controls/personal protection****Additional information about design of technical systems: No further data; see item 7.****Control parameters****Components with limit values that require monitoring at the workplace:****89452-37-9 Triarylsulfonium hexafluoroantimonate salt**ACGIH TLV TWA 0.5 mg/m³NIOSH IDLH 50 mg/m³OSHA PEL 0.5 mg/m³**71449-78-0 Aromatic sulfonium hexafluoroantimonate salt**ACGIH TLV TWA: 0.5 mg/m³NIOSH IDLH 50 mg/m³OSHA PEL 0.5 mg/m³**Additional information: The lists that were valid during the creation were used as basis.**

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from food and beverages.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **Respiratory equipment:**
In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves** Nitrile rubber, NBR
- **Penetration time of glove material** Contact glove manufacture for break-through time.
- **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Liquid
Color:	Clear to light yellow
Odor:	Sweet
Odour threshold:	Not determined.
- **pH-value:** Not determined.
- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	130 °C (266 °F)
- **Flash point:** 30 °C (86 °F)
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:** 430 °C (806 °F)
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
- **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

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· Vapor pressure:	Not determined.				
· Density:	See other information				
· Relative density	Not determined.				
· Vapour density	Not determined.				
· Evaporation rate	1 (BuAc: 1)				
· Solubility in / Miscibility with Water:	Water miscible No				
· Partition coefficient (n-octanol/water):	Not determined.				
· Viscosity:	Not determined.				
Dynamic:	Not determined.				
Kinematic:	Not determined.				
· Other information	Name	Number	Sp. Grav.	Vol. (%by wt.)	VOC (g/L)
	SU-8 2000.1	Y111004	1.00	94-98	960
	SU-8 2000.2	Y111007	1.00	90-95	930
	SU-8 2000.5	Y111014	1.07	85-90	920
	SU-8 2001	Y111022	1.100	80-85	860
	SU-8 2002	Y111029	1.123	70-75	800
	SU-8 2005	Y111045	1.164	50-55	640
	SU-8 2007	Y111053	1.175	45-50	550
	SU-8 2010	Y111058	1.187	40-45	500
	SU-8 2015	Y111064	1.200	35-40	430
	SU-8 2025	Y111069	1.219	30-35	380
	SU-8 2035	Y111070	1.227	20-30	370
	SU-8 2050	Y111072	1.233	20-30	345
	SU-8 2075	Y111074	1.236	20-30	320
	SU-8 2100	Y111075	1.237	20-30	310
	SU-8 2150	Y111077	1.238	20-30	285

10 Stability and reactivity

- **Reactivity**
- **Chemical stability** Stable
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Exothermic polymerization.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
Strong Oxidizing Agents, Strong Bases, Strong Acids, Strong Reducing Agents, Iron, Hydrazine
- **Hazardous decomposition products:**
Carbon monoxide
Corrosive gases/vapors
Danger of toxic pyrolysis products.

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11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

· LD/LC50 values that are relevant for classification:

28906-96-9 Epoxy resin

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)
Inhalative	LC50	5 mg/L (rat)
	100<LC/EC/IC 50	≤1000 mg/l (algae)
		≤1000 mg/l (fish)
		≤1000 mg/l (invertebrates)

120-92-3 cyclopentanone

Oral	LD50	1180 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)
Inhalative	LC50/4 h	>19.5 mg/l (rat)

108-32-7 propylene carbonate

Oral	LD50	29000 mg/kg (rat)
Dermal	LD50	>20.000 mg/kg (rabbit)

· Specific symptoms in biological assay:

Mixture of triarylsulfonium/hexafluoroantimonate salts (CAS 71449-78-0 and 89452-37-9) in propylene carbonate (CAS 108-32-7):

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

Propylene carbonate (CAS 108-32-7):

This substance had a negative Ames test with or without metabolic activation.

· Primary irritant effect:

- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.
- Sensitization: Sensitization possible through skin contact.
- Experience with humans: Target organs: Central Nervous System
- Additional toxicological information: Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

· NTP (National Toxicology Program)

None of the ingredients are listed.

12 Ecological information

· Toxicity

· Aquatic toxicity:

89452-37-9 Triarylsulfonium hexafluoroantimonate salt

EC50/17 h	>10000 mg/l (<i>Pseudomonas putida</i>)
EC50/48 h	>500 mg/l (<i>daphnia magna</i>)

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EC50/72 h	>500 mg/l (<i>scenedesmus subspicatus</i>)
71449-78-0 Aromatic sulfonium hexafluoroantimonate salt	
EC50/17 h	>10000 mg/l (<i>Pseudomonas putida</i>)
EC50/48 h	>500 mg/l (<i>daphnia magna</i>)
EC50/72 h	>500 mg/l (<i>scenedesmus subspicatus</i>)
108-32-7 propylene carbonate	
EC50/17 h	>10000 mg/l (<i>Pseudomonas putida</i>)
EC50/48 h	>500 mg/l (<i>daphnia magna</i>)
EC50/72 h	>500 mg/l (<i>scenedesmus subspicatus</i>)
LC50/96 h	2200 mg/l (<i>Leuciscus idus</i>)

- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made in accordance with Federal, State, and Local regulations.

14 Transport information

- | | |
|----------------------------------|---------------------|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | UN1866 |
| · UN proper shipping name | |
| · DOT, IMDG, IATA | RESIN SOLUTION |
| · ADR | 1866 RESIN SOLUTION |

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· Transport hazard class(es)

· DOT



· Class 3 Flammable liquids.
· Label 3

· ADR, IMDG, IATA



· Class 3 Flammable liquids
· Label 3

· Packing group

· DOT, ADR, IMDG, IATA III

· Environmental hazards:

· Marine pollutant: No

· Special precautions for user Warning: Flammable liquids

· Danger code (Kemler): 30

· EMS Number: F-E,S-D

· Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code Not applicable.

· UN "Model Regulation": UN1866, RESIN SOLUTION, 3, III

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):

89452-37-9 Triarylsulfonium hexafluoroantimonate salt

71449-78-0 Aromatic sulfonium hexafluoroantimonate salt

· TSCA (Toxic Substances Control Act):

All ingredients are listed or comply with TSCA regulations.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients are listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

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· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

· **Massachusetts State Right To Know List**

120-92-3 | cyclopentanone

· **New Jersey State Right To Know List**

120-92-3 | cyclopentanone

· **Pennsylvania Hazardous Substances List**

120-92-3 | cyclopentanone

· **California SCAQMD Rule 443.1 VOC's: See Table 1 - Section 9**· **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).· **Hazard pictograms**

GHS02 GHS07 GHS08 GHS09

· **Signal word** Warning· **Hazard-determining components of labelling:**

Epoxy resin

Triarylsulfonium hexafluoroantimonate salt

Aromatic sulfonium hexafluoroantimonate salt

· **Hazard statements**

H226 Flammable liquid and vapor.

H303 May be harmful if swallowed.

H313 May be harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H411 Toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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Trade name: SU-8 2000 Series Resists

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P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Product safety department

· **Contact:** Mr. Weber

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

· * **Data compared to the previous version altered.**

