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.: 617-965-5311
  - Chemtrec USA Emergency: 800-424-9300
  - Chemtrec International Emergency: 703-527-3887

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2 Hazards identification

- **Classification of the substance or mixture**
  - GHS02 Flame
  - **Flam. Liq. 3**: H226 Flammable liquid and vapor.
  - GHS08 Health hazard
  - **Mut. 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).
Hazard pictograms

- Signal word: Warning
- Hazard-determining components of labelling:
  - Epoxy resin
  - Triarylsulfonium hexafluoroacetoacinate salt
  - Aromatic sulfonium hexafluoroacetoacinate salt
- Hazard statements:
  - H226 Flammable liquid and vapor.
  - H308 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.
  - P301 + P330 + P331 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
    - Fire = 3
    - Reactivity = 0
- Other hazards:
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
3 Composition/information on ingredients

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

### Dangerous components:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epoxy resin</td>
<td>3-75%</td>
</tr>
<tr>
<td>Apia 2, H341</td>
<td>15-96%</td>
</tr>
<tr>
<td>Epoxy resin 2A, H319</td>
<td>0.1-5%</td>
</tr>
<tr>
<td>Aromatic sulfonium hexafluoropropionate salt</td>
<td>0.05-2.5%</td>
</tr>
<tr>
<td>Aromatic sulfonium hexafluoropropionate salt</td>
<td>0.05-2.5%</td>
</tr>
</tbody>
</table>

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.
Trade name: SU-8 2000 Series Resists

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:

<table>
<thead>
<tr>
<th>89432-37-9 Triarylsulfonium hexafluoroantimonate salt</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TLV TWA</td>
</tr>
<tr>
<td>NIOSH IDLH</td>
</tr>
<tr>
<td>OSHA PEL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>71449-78-0 Aromatic sulfonium hexafluoroantimonate salt</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TLV TWA</td>
</tr>
<tr>
<td>NIOSH IDLH</td>
</tr>
<tr>
<td>OSHA PEL</td>
</tr>
</tbody>
</table>

Additional information: The lists that were valid during the creation were used as basins.
9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance:** Liquid
  - **Color:** Clear to light yellow
  - **Odor:** Sweet
  - **Odor 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.
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.
11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

<table>
<thead>
<tr>
<th>LD/LC50 values that are relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>28906-96-9 Epoxy resin</strong></td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>Inhalative LC50</td>
</tr>
<tr>
<td>100&lt;LC/EC/IC 50</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>120-92-3 cyclopentanone</strong></td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
</tr>
<tr>
<td><strong>108-32-7 propylene carbonate</strong></td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
</tbody>
</table>

- Specific symptoms in biological assay:
- Mixture of triaryl sulfonium 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 Triaryl sulfonium hexafluoroantimonate salt
  EC50/17 h >10000 mg/l (Pseudomonas putida)
  EC50/48 h >500 mg/l (daphnia magna)
Safety Data Sheet
acc. to ISO/DIS 11014

Trade name: SU-8 2000 Series Resists

| EC50/72 h | >500 mg/l (Scecechidus subsarcus) |
| 71449-78-0 Aromatic sulphonium hexafluoroantimonate salt |
| EC50/17 h | >10000 mg/l (Pseudomonas putida) |
| EC50/48 h | >500 mg/l (daphnia magna) |
| EC50/72 h | >500 mg/l (Scecechidus subsarcus) |
| 108-32-7 propylene carbonate |
| EC50/17 h | >10000 mg/l (Pseudomonas putida) |
| EC50/48 h | >500 mg/l (daphnia magna) |
| EC50/72 h | >500 mg/l (Scecechidus subsarcus) |
| LC50/96 h | 2200 mg/l (Lacusens idus) |

- 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 to 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
Safety Data Sheet
acc. to ISO/DIS 11014

Trade name: SU-8 2000 Series Resists

- Transport hazard class(es)
  - DOT
    - Class
    - Label
  - ADR, IMDG, IATA
    - Class
    - Label
- Packing group
  - DOT, ADR, IMDG, IATA
- Environmental hazards:
- Marine pollutant:
- Special precautions for user
  - Dangerous (Kemler):
  - EMS Number:
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- UN “Model Regulation”:

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 315 (Specific toxic chemical listings):
      - 89452-37-9 Triaryltsufonium hexahalorouanimonate salt
      - 71449-78-0 Aromatic sulphonium hexahalorouanimonate 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.
### 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.
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: Reglement 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
  - IMDG: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IATA: 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.