

## SAFETY DATA SHEET

Creation Date 10-08-2019

### SECTION 1: Identification

**Product Name:** SU-8 negative-tone photoresist  
**Identified Uses:** Negative tone electron beam resist  
**Company** EM Resist Ltd.  
23G  
Alderley Park  
Macclesfield  
SK10 4TG  
UNITED KINGDOM  
**Telephone** +44 (0)1625 704465  
**E-mail Address** [info@emresist.com](mailto:info@emresist.com)  
**Emergency Phone #** +44 (0)1625 704465

### SECTION 2: Hazards identification

#### Classification

|  |              |
|--|--------------|
| Acute toxicity, Oral                             | (Category 4) |
| Serious eye damage/eye irritation                | (Category 1) |
| Specific target organ toxicity – single exposure | (Category 3) |

#### Label Elements

**Pictogram**



**Signal Word**

Warning

#### **Hazard statement(s):**

H302 Harmful if swallowed.

H315 & Causes skin irritation /  
H317 May cause an allergic  
skin reaction.

H318 & Causes serious eye  
H319 damage / irritation.

#### **Precautionary statement(s):**

P261 Avoid breathing  
dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/eye  
protection/face protection.

P305+P351+P338 If in eyes, rinse cautiously with  
water for several minutes. Remove  
contact lenses, if  
present and easy to do. Continuing

H332 &  
H336 Harmful if inhaled /  
May cause drowsiness  
or dizziness.

P501

rinsing. Call a Poison Centre or  
doctor/physician.  
Dispose of contents/container in  
accordance with local/national  
regulations.

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**SECTION 3: Composition / information on ingredients**

| Component   | Weight % |
|---|----------|
| Novolac phenol epoxy resin<br>CAS: 28906-96-9                 | 5-80     |
| Gamma Butyrolactone<br>96-48-0                                | 15-90    |
| Triarylsulfonium<br>hexafluoroantimonate salts<br>109037-75-4 | <3       |
| Propylene carbonate<br>108-32-7                               | 0 - 3    |
| May contain additives   | < 5      |

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**SECTION 4: First-aid measures**

|  |  |
|--|--|
| <b>Eye Contact</b>                     | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention  |
| <b>Skin Contact</b>                    | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.  |
| <b>Inhalation</b>                      | Move to fresh air. If breathing is difficult give oxygen. Get medical attention if symptoms occur.   |
| <b>Ingestion</b>                       | Do not induce vomiting. Wash out mouth with water to a conscious person. Obtain medical attention  |
| <b>Most important symptoms/effects</b> | An anaesthetic effect on the central nervous system characterized by a loss of sensation. Preliminary excitement is the initial effect followed by relaxation, stupor or sleep. Nausea, dizziness, headache. |

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**SECTION 5: Fire-fighting measures**

|                                     |   |
|-------------------------------------|---|
| <b>Suitable Extinguishing Media</b> | Carbon dioxide, dry chemical powder or appropriate foam, water spray. |
| <b>Flash Point</b>                  | 98 °C   |
| <b>Autoignition Temperature</b>     | 475°C / 887°F   |

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|  |   |
|--|---|
| <b>Specific Hazards Arising from the Chemical</b>            | Combustible liquid. Emits toxic fumes under fire conditions (CO, CO <sub>2</sub> , SO <sub>2</sub> , HF). |
| <b>Hazardous Combustion Products</b>                         | Combustible liquid. Emits toxic fumes under fire conditions (CO, CO <sub>2</sub> , SO <sub>2</sub> , HF). |
| <b>Protective Equipment and Precautions for Firefighters</b> | Wear self-contained breathing apparatus for firefighting if necessary.                                    |

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## SECTION 6: Accidental release measures

|   |  |
|---|--|
| <b>Personal Precautions</b>                 | Wear suitable protective clothing. Avoid breathing vapours or gases. Ventilate area.   |
| <b>Environmental Precautions</b>            | Avoid direct release into drains, place in closed containers for disposal.   |
| <b>Methods for Containment and Clean Up</b> | Ventilate area and wash spill site after material pickup with inert absorbent material is complete.<br>Keep the waste in suitable closed container for disposal. |

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## SECTION 7: Handling and storage

|                 |   |
|-----------------|---|
| <b>Handling</b> | Use only under yellow light. Safety shower and eye bath.<br>Mechanical exhaust required. Avoid prolonged or repeated exposure. Do not breathe vapour. Avoid contact with eyes, skin and clothing. Chemical resistant and safety gloves. |
| <b>Storage</b>  | Store in a dry fresh place (5-20°C). Keep tightly closed. Light sensitive. Hygroscopic.   |

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## SECTION 8: Exposure controls/personal protection

|                                      |  |
|--------------------------------------|--|
| <b>Exposure Guidelines</b>           |  |
| <b>Engineering Measures</b>          |  |
| <b>Personal Protective Equipment</b> | Handle with gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.  |
| <b>Eye/face Protection</b>           | Safety glasses approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).  |
| <b>Skin and body protection</b>      | Choose body protection according to the amount and concentration of the dangerous substance at the work place.   |
| <b>Respiratory Protection</b>        | Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face |

**Hygiene Measures**

supplied air  
respirator. Use respirators and components  
tested and approved under appropriate  
government standards  
such as NIOSH (US) or CEN (EU).  
Handle in accordance with good industrial  
hygiene and safety practice. Wash hands  
before breaks and at the end of workday.

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**SECTION 9: Physical and chemical properties**

|  |                   |
|--|-------------------|
| Physical State                             | Liquid            |
| Appearance                                 | Yellow to clear   |
| Odor                                       | -                 |
| Odor Threshold                             | -                 |
| pH   | -                 |
| Melting Point/Range                        | -                 |
| Boiling Point/Range                        | 204-205°C         |
| Flash Point                                | 98 °C             |
| Evaporation Rate                           | -                 |
| Flammability (solid,gas)                   | -                 |
| Flammability or explosive limits           | -                 |
| Upper                                      | -                 |
| Lower                                      | -                 |
| Vapor Pressure                             | 1.5 mm Hg at 20°C |
| Vapor Density                              | -                 |
| Relative Density                           | 1.13-1.20         |
| Solubility                                 | -                 |
| Autoignition Temperature                   | -                 |
| Decomposition Temperature                  | -                 |
| Partition coefficient: n-<br>octanol/water | -                 |
| Viscosity                                  | -                 |

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**SECTION 10: Stability and reactivity**

|                                     |  |
|-------------------------------------|--|
| Reactive Hazard                     |  |
| Stability                           | Stable in normal conditions of use during 1 year: keep in a dry,<br>fresh and dark place.  |
| Conditions to avoid                 | Keep away from heat.   |
| Incompatible Materials              |  |
| Hazardous Decomposition<br>Products |  |
| Hazardous Polymerisation            | Exothermic polymerization with amine, mercaptan and Lewis<br>acids.  |
| Hazardous Reactions                 | Hazardous combustion or decomposition products: Acids,<br>Aldehydes, Carbon monoxide-dioxide,<br>Phosphorous/antimony oxides, Hydrogen Fluoride Gas. |

**SECTION 11: Toxicological information****Acute Toxicity****Product Information****Component Information**

| Component   | LD50 Oral         | LD50 Dermal                | LC50 Inhalation       |
|---|-------------------|----------------------------|-----------------------|
| Toxicity hazards of each basic products cited in section 3. | Rat<br>1540 mg/kg | Guinea pig<br>> 5000 mg/kg | Rat<br>4h >5100 mg/m3 |

**Signs and symptoms of exposure:**

Anaesthetic effect on the central nervous system characterized by a loss of sensation. Preliminary excitement is the initial effect followed by relaxation stupor or sleep, nausea, dizziness, headache.

**Toxicologically Synergistic Products**

No information available

**Potential health effects:**

**Inhalation:** may be harmful if inhaled. May cause respiratory tract irritation.

**Skin:** may be harmful if absorbed through skin. May cause skin irritation.

**Eyes:** causes eye irritation / burns.

**Ingestion:** harmful if swallowed.

**Target organs:** central nervous system.

**SECTION 12: Ecological Information**

|  |   |
|--|---|
| <b>Ecotoxicity</b>                                       | Solvent toxicity to fish: LC50 Leuciscus idus (Golden orfe) > 220 mg/l for 96 h |
| <b>BOD5 and COD</b>                                      | -   |
| <b>Products of Biodegradation</b>                        | -   |
| <b>Toxicity of the Products of Biodegradation</b>        | -   |
| <b>Special remarks on the Products of Biodegradation</b> | -   |

**SECTION 13: Disposal Considerations**

|                               |   |
|-------------------------------|---|
| <b>Product</b>                | Observe all federal, state, and local environmental regulations.<br>Contact a licensed professional waste disposal service to dispose of this material. |
| <b>Contaminated Packaging</b> | Clean with a solvent (as acetone) before to put in the specific garbage.  |

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## SECTION 14: Transport Information

**RID/ADR:** Not dangerous goods.

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods.

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## Section 15. Regulatory Information

**Labelling according to EC Directives. Cf. §2.2.**

### International Inventories

| Component                  | EINECS    | ELINCS | NLP | TSCA | DSL | NDSL | PICCS | ENCS | IECSC | AICS | KECL |
|----------------------------|-----------|--------|-----|------|-----|------|-------|------|-------|------|------|
| <b>Gamma butyrolactone</b> | 202-509-5 | -      |     | X    | X   | -    | X     | X    | X     | X    | X    |
| <b>Propylene carbonate</b> | 203-572-1 | -      |     | X    | X   | -    | X     | X    | X     | X    | X    |

### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substance list

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**KECL** - Existing and Evaluated Chemical Substances

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## SECTION 16: Other information

|                         |  |
|-------------------------|--|
| <b>Prepared By</b>      | EM Resist Ltd.   |
| <b>Creation Date</b>    | 10-08-2019   |
| <b>Revision Date</b>    | 19-08-2019   |
| <b>Revision Summary</b> | This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under |

29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

**Disclaimer**

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