SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
mr-EBL 6000 Negative Photoresist Series for Electron Beam Lithography

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture
- Photoresist

Product Categories [PC]: Photosensitive agent and other photochemicals
Sector of uses [SU]: Manufacture of computer, electronic and optical products, electrical equipment.

Uses advised against
Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: micro resist technology GmbH
Street: Koepenicker Str. 325
Place: D-12555 Berlin
Telephone: +49 30 641670-100  Telefax: +49 30 641670-200
e-mail: safety@microresist.de
Internet: www.microresist.de

1.4. Emergency telephone number:
Chemtrec (International - 24 h): +1 703 527 3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
- Flammable liquid: Flam. Liq. 3
- Skin corrosion/irritation: Skin Irrit. 2
- Serious eye damage/eye irritation: Eye Irrit. 2
- Respiratory or skin sensitisation: Skin Sens. 1
- Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:
- Flammable liquid and vapour.
- Causes skin irritation.
- Causes serious eye irritation.
- May cause an allergic skin reaction.
- Harmful to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling
- Anisole
- propylene carbonate
- Mixture of triarylsulfonium hexafluoroantimonate salts

Signal word: Warning

Pictograms:

Hazard statements
H226  Flammable liquid and vapour.
Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P352 Wash with plenty of water.
P363 Wash contaminated clothing before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P403+P235 Store in a well-ventilated place. Keep cool.

2.3. Other hazards
No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>EC No</th>
<th>Index No</th>
<th>REACH No</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-66-3</td>
<td>Anisole</td>
<td></td>
<td></td>
<td></td>
<td>70-100 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>202-876-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flam. Liq. 3, Skin Irrit. 2, Eye Irrit. 2; H226 H315 H319</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108-32-7</td>
<td>propylene carbonate</td>
<td></td>
<td></td>
<td></td>
<td>&lt;2 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>203-572-1</td>
<td>607-194-00-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eye Irr. 2; H319</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>109037-75-4</td>
<td>Mixture of triarylsulfonium hexafluoroantimonate salts</td>
<td></td>
<td></td>
<td></td>
<td>&lt;2 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H317 H400 H410</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
After inhalation
Provide fresh air. In case of breathing difficulties administer oxygen. If victim is at risk of losing consciousness, position and transport on their side. In case of respiratory tract irritation, consult a physician.

After contact with skin
After contact with skin, wash immediately with plenty of water and soap. Change contaminated clothing. In case of skin irritation, seek medical treatment.

After contact with eyes
Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist.

After ingestion

4.2. Most important symptoms and effects, both acute and delayed
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
Carbon dioxide (CO2). Dry extinguishing powder. Foam.

Unsuitable extinguishing media
Water.

5.2. Special hazards arising from the substance or mixture
In case of fire and/or explosion do not breathe fumes.

5.3. Advice for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing. Full protective suit.

Additional information
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment.

6.2. Environmental precautions
Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect in closed containers for disposal. Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections
Treat the recovered material as prescribed in the section on waste disposal. See protective measures under point 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling
Use only in well-ventilated areas. Only use the material in places where open light, fire and other flammable sources can be kept away. Do not breathe vapour/aerosol.

Advice on protection against fire and explosion
In case of fire, use sand, earth, extinguishing powder or foam. Never use water.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharges.
Suitable floor material: Solvent-proof.
Keep container tightly closed in a cool, well-ventilated place.
Further information concerning storage conditions: Observe technical data sheet.: Processing Guidelines

Advice on storage compatibility
Do not store together with:
- Oxidising agent
- self-heating substances and mixtures

Further information on storage conditions
Proteck against: heat. UV-radiation/sunlight.

7.3. Specific end use(s)
No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Additional advice on limit values
No data available

8.2. Exposure controls

Appropriate engineering controls
If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Wear personal protection equipment. Provide adequate ventilation.

Protective and hygiene measures
Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink.

Eye/face protection
Suitable eye protection: Tightly sealed safety glasses.

Hand protection
Tested protective gloves are to be worn: Single-use gloves.
German Industry Norms (DIN) / European Norms (EN): DIN EN 374

Duration of wearing with permanent contact:
Suitable material: FKM (fluororubber).
Thickness of glove material: 0.7 mm
penetration time (maximum wearing period): > 480 min
Recommended protective gloves brand: KCL 890 Vitoject, Manufacturer: KCL GmbH, D-36124 Eichenzell,
Source of supply: www.kcl.de

Wearing time with occasional contact (splashes): [Further information]
Suitable material: NBR (Nitrile rubber).
Thickness of glove material: 0.4 mm
penetration time (maximum wearing period): > 30 min

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**Skin protection**
For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

**Respiratory protection**
If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Respiratory protection necessary at: aerosol or mist generation. Filtering device (full mask or mouthpiece) with filter: A

**Environmental exposure controls**
Do not empty into drains.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>light yellow</td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
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<td>pH-Value</td>
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<tr>
<td>Changes in the physical state</td>
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<tr>
<td>Melting point</td>
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</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>156 °C (Anisole)</td>
<td></td>
</tr>
<tr>
<td>Sublimation point</td>
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</tr>
<tr>
<td>Softening point</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Pour point</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>43 °C (Anisole)</td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid</td>
<td>No data available</td>
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</tr>
<tr>
<td>Gas</td>
<td>No data available</td>
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<tr>
<td>Explosive properties</td>
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<td>No data available</td>
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<td>Lower explosion limits</td>
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</tr>
<tr>
<td>Upper explosion limits</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>475 °C (Anisole)</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
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</tr>
<tr>
<td>Oxidizing properties</td>
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<td></td>
</tr>
<tr>
<td>No data available</td>
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<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
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</tr>
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</table>
Vapour pressure: No data available
Density (at 25 °C): 1.005-1.04 g/cm³
Bulk density: No data available
Water solubility: insoluble

Solubility in other solvents
No data available
Partition coefficient: No data available
Viscosity / dynamic:
(at 25 °C) 1-4 mPa·s
Viscosity / kinematic: No data available
Flow time: No data available
Vapour density: No data available
Evaporation rate: No data available
Solvent separation test: No data available
Solvent content: No data available

9.2. Other information
Solid content: No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available
10.2. Chemical stability
No data available
10.3. Possibility of hazardous reactions
No data available
10.4. Conditions to avoid
10.5. Incompatible materials
Oxidizing agents, strong. Reducing agents, strong.
10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity
Based on available data, the classification criteria are not met.
Acute toxicity, oral LD50: 3700 mg/kg species: Rat (Anisole)
### Irritation and corrosivity
- Causes skin irritation.
- Causes serious eye irritation.
  - Method: Calculation method.

### Sensitising effects
- May cause an allergic skin reaction. (Mixture of triarylsulfonium hexafluoroantimonate salts)

### Carcinogenic/mutagenic/toxic effects for reproduction
- Based on available data, the classification criteria are not met.

### STOT-single exposure
- Based on available data, the classification criteria are not met.

### STOT-repeated exposure
- Based on available data, the classification criteria are not met.

### Aspiration hazard
- Based on available data, the classification criteria are not met.

### Additional information on tests
- No data available

### SECTION 12: Ecological information

#### 12.1. Toxicity
- No data available

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-66-3</td>
<td>Anisole</td>
<td>LD50</td>
<td>3700 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td>108-32-7</td>
<td>propylene carbonate</td>
<td>LD50</td>
<td>34600 mg/kg</td>
<td>Rat</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aquatic toxicity</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anisole</td>
<td>LD50</td>
<td>&gt; 1 mg/l</td>
<td>96 h</td>
<td>Danio rerio</td>
<td></td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability
- No data available

#### 12.3. Bioaccumulative potential
- No data available

#### Partition coefficient n-octanol/water

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-66-3</td>
<td>Anisole</td>
<td>2.11</td>
</tr>
<tr>
<td>108-32-7</td>
<td>propylene carbonate</td>
<td>-0.41</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil
- No data available

#### 12.5. Results of PBT and vPvB assessment
- No data available
12.6. Other adverse effects

No data available

Further information

Do not allow uncontrolled leakage of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains.
Dispose of waste according to applicable legislation.
Consult the local waste disposal expert about waste disposal.

Contaminated packaging

Dispose of waste according to applicable legislation.
Consult the local waste disposal expert about waste disposal.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1866
14.2. UN proper shipping name: Resin solution
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3

Classification code: F1
Special Provisions: 640E
Limited quantity: 5 L
Excepted quantity: E1
Transport category: 3
Hazard No: 30
Tunnel restriction code: D/E

Marine transport (IMDG)

14.1. UN number: UN 1866
14.2. UN proper shipping name: Resin solution
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3

Special Provisions: 223, 955
Limited quantity: 5 L
Excepted quantity: E1
EmS: F-E, S-E

Air transport (ICAO)

14.1. UN number: UN 1866
14.2. UN proper shipping name: Resin solution

14.3. Transport hazard class(es): 3

14.4. Packing group: III

Hazard label: 3

Special Provisions: A3

Limited quantity Passenger: 10 L

Passenger LQ: Y344

Excepted quantity: E1

IATA-packing instructions - Passenger: 355

IATA-max. quantity - Passenger: 60 L

IATA-packing instructions - Cargo: 366

IATA-max. quantity - Cargo: 220 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Warning: Combustible liquids.
See protective measures under point 7 and 8.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EU regulatory information

2004/42/EC (VOC): 70%-100%

National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils according to the ‘juvenile work protection guideline’ (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water contaminating class (D): 2 - water contaminating

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes
chapter: 1, 9, 11, 13, 14

Abbreviations and acronyms

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
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

**Relevant H and EUH statements (number and full text)**

- **H226**: Flammable liquid and vapour.
- **H315**: Causes skin irritation.
- **H317**: May cause an allergic skin reaction.
- **H319**: Causes serious eye irritation.
- **H400**: Very toxic to aquatic life.
- **H410**: Very toxic to aquatic life with long lasting effects.
- **H412**: Harmful to aquatic life with long lasting effects.

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)