

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### mr-EBL 6000 Negative Photoresist Series for Electron Beam Lithography

Print date: 09.02.2017

Product code: R280XXX

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#### 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.

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H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

#### 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

##### Hazardous components

CAS No	Chemical name	Quantity
	EC No	
	Index No	
	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
100-66-3	Anisole	70-100 %
	202-876-1	
	Flam. Liq. 3, Skin Irrit. 2, Eye Irrit. 2; H226 H315 H319	
108-32-7	propylene carbonate	<2 %
	203-572-1	
	607-194-00-1	
	Eye Irrit. 2; H319	
109037-75-4	Mixture of triarylsulfonium hexafluoroantimonate salts	<2 %
	Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H317 H400 H410	

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).

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#### 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

Rinse mouth immediately and drink plenty of water.

Caution if victim vomits: Risk of aspiration!

Medical treatment necessary.

#### 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 (CO<sub>2</sub>). 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

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#### 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

Protect 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):

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Suitable material: NBR (Nitrile rubber).  
 Thickness of glove material: 0.4 mm  
 penetration time (maximum wearing period): > 30 min  
 Recommended protective gloves brand: KCL 730 Camatril-Velours, Manufacturer: KCL GmbH, D-36124  
 Eichenzell, Source of supply: www.kcl.de

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

Physical state:	liquid
Colour:	light yellow
Odour:	characteristic

#### Test method

pH-Value: No data available

#### Changes in the physical state

Melting point:	No data available
Initial boiling point and boiling range:	156 °C (Anisole)
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
Flash point:	43 °C (Anisole)

#### Flammability

Solid:	No data available
Gas:	No data available

#### Explosive properties

No data available

Lower explosion limits: No data available

Upper explosion limits: No data available

Ignition temperature: 475 °C (Anisole)

#### Auto-ignition temperature

Solid:	No data available
Gas:	No data available

Decomposition temperature: No data available

#### Oxidizing properties

No data available

Vapour pressure: No data available

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Vapour pressure:	No data available
Density (at 25 °C):	1.005-1.04 g/cm <sup>3</sup>
Bulk density:	No data available
Water solubility:	insoluble
<b>Solubility in other solvents</b>	
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

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**

UV-radiation/sunlight.

Keep away from heat. Keep away from sources of ignition. - No smoking.

Ignition hazard.

**10.5. Incompatible materials**

Oxidizing agents, strong.

Reducing agents, strong.

**10.6. Hazardous decomposition products**

Peroxides. Carbon monoxide. Carbon dioxide.

**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)

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CAS No	Chemical name			
	Exposure route	Dose	Species	Source
100-66-3	Anisole			
	oral	LD50 3700 mg/kg	Rat	
108-32-7	propylene carbonate			
	oral	LD50 34600 mg/kg	Rat	GESTIS
	dermal	LD50 > 23800 mg/kg	Rabbit	GESTIS

**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

CAS No	Chemical name				
	Aquatic toxicity	Dose	[h]   [d]	Species	Source
100-66-3	Anisole				
	Acute fish toxicity	LC50 > 1 mg/l	96 h	Danio rerio	

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

No data available

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
100-66-3	Anisole	2,11
108-32-7	propylene carbonate	-0,41

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

No data available

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#### 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)**

<b><u>14.1. UN number:</u></b>	UN 1866
<b><u>14.2. UN proper shipping name:</u></b>	Resin solution
<b><u>14.3. Transport hazard class(es):</u></b>	3
<b><u>14.4. Packing group:</u></b>	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)**

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



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

#### **Air transport (ICAO)**

<b><u>14.1. UN number:</u></b>	UN 1866
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<b>14.2. UN proper shipping name:</b>	Resin solution
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	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

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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.

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