1. Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation
mr-UVCur21-100nm

Use of the substance/preparation
Polymer for UV-based Nano Imprint Lithography

Company/undertaking identification
Company name: micro resist technology GmbH
Street: Koepenicker Str. 325, Haus 211
Place: D-12555 Berlin
Telephone: +49 30 65762192
Fax: +49 30 65762193
E-mail: mrt@microresist.de
Internet: www.microresist.de

2. Hazards identification

Classification
Indications of danger: Harmful, Irritant
R-phrases:
Flammable.
Harmful by inhalation and in contact with skin.
Irritating to eyes, respiratory system and skin.

3. Composition/information on ingredients

Chemical characterization (preparation)

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>Quantity</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC-No.</td>
<td>CAS-No.</td>
<td>Chemical name</td>
</tr>
<tr>
<td>203-685-6</td>
<td>109-59-1</td>
<td>2-isopropxyethanol, ethylene glycol</td>
</tr>
<tr>
<td>212-112-9</td>
<td>763-69-9</td>
<td>Ethyl 3-ethoxypropionate</td>
</tr>
<tr>
<td>255-901-3</td>
<td>42594-17-2</td>
<td>(octahydro-4,7-methano-1H-indenediyl)bis</td>
</tr>
<tr>
<td>219-099-9</td>
<td>2358-84-1</td>
<td>(methylene) diacrylate</td>
</tr>
<tr>
<td>100-47-0</td>
<td>57-62-5</td>
<td>Oxydi-2,1-ethanediyl bismethacrylate</td>
</tr>
</tbody>
</table>

Full text of each relevant R phrase can be found in heading 16.

4. First aid measures

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 irritation of the respiratory tract seek medical advice.

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
Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Consult an ophthalmologist.

After ingestion
Rinse mouth immediately and drink large quantities of water. Consult physician.
5. Fire-fighting measures

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

Extinguishing media which must not be used for safety reasons
- High power water jet.

Special exposure hazards arising from substance or preparation itself, combustion products, resulting gases
- Product is: Combustible. Vapours are heavier than air and will spread at floor level. Formation of potentially explosive mixtures with: Air. In case of fire and/or explosion do not breathe fumes.
- Can be released in case of fire: Nitrogen oxides (NOx). Carbon monoxide. Carbon dioxide (CO2).

Special protective equipment for fire-fighters
- In case of fire: Wear self-contained breathing apparatus. Wear chemical resistant suit.

Additional information
- Use water spray/stream to protect personnel and to cool endangered containers. Contaminated fire-fighting water must be collected separately.

6. Accidental release measures

Personal precautions
- Remove all sources of ignition. The following must be prevented: inhalation. skin contact. Eye contact.
- Provide adequate ventilation.

Environmental precautions
- Due to danger of explosion, prevent leakage of vapors into cellars, flues and ditches.

Methods for cleaning up/taking up
- Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
- Collect in closed containers for disposal. Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Handling

Advice on safe handling
- Use only in well-ventilated areas.
- If suction of the immediate vicinity is impossible or insufficient, adequate airing of the working place must be ensured.
- Avoid contact with skin and eyes.
- Keep away from sources of ignition - No smoking.

Advice on protection against fire and explosion
- Take precautionary measures against static discharges.

Storage

Requirements for storage rooms and vessels
- Keep container tightly closed and in a well-ventilated place. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Suitable material for floor covering: Solvent-proof.
- storage temperature: of °C: 15 up to °C: 25

Further information on storage conditions
- Protect against: heat. UV-radiation/sunlight.
- Protect against: Emission of air/oxygen.
- Materials to avoid: Air. Formation of: peroxides.
8. Exposure controls/personal protection

Exposure limit values

Exposure controls

Protective and hygiene measures
Change contaminated clothing. Protect skin by using skin protective cream. Wash hands before breaks and at the end of work. When using do not eat, drink or smoke.

Respiratory protection
If technical suction or ventilation measures are not possible or are insufficient, protective breathing apparatus must be worn. Respiratory protection required in case of: aerosol or mist generation. Filter respirator (full mask or mouth-piece) with filter: A

Hand protection
Tested protective gloves are to be worn: Single-use gloves.
Type of chemical protective gloves to choose depends on the concentration and quantity of dangerous substances as well as on work place specifications.
In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.
Breakthrough times and swelling characteristics of the material must be taken into consideration.
Before using check leak tightness / impermeability.

Eye protection
Suitable eye protection: Tightly sealed safety glasses.
Don’t wear contact lenses.

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

9. Physical and chemical properties

General information

Physical state : liquid
Colour : clear
Odour : characteristic

Important health, safety and environmental information

pH-Value : not applicable

Changes in the physical state
Melting point : not applicable
Boiling point : not applicable
Flash point : 45 °C
Density (at 20 °C) : ~0.94 g/cm³
Water solubility : partially soluble
Viscosity / dynamic :
(at 25 °C) 1.5-2.0 mPa·s

Other information
Ignition temperature : 240 °C

10. Stability and reactivity

Conditions to avoid
Light. heat.
Materials to avoid
Reducing agents, Oxidizing agents., Alkalis (alkalis), concentrated.

Hazardous decomposition products

Additional information
Unsuitable materials: light metals. In use, may form flammable/explosive vapour-air mixture.

11. Toxicological information

Acute toxicity
Acute toxicity, inhalant LC50: 3.1 mg/l /4h species: Rat. (2-isopropoxyethanol, ethylene glycol monoisopropyl ether)
Acute toxicity, dermal LD50: 1440 mg/kg species: Rabbit. (2-isopropoxyethanol, ethylene glycol monoisopropyl ether)
Acute toxicity, oral LD50: 5660 mg/kg species: Rat. (2-isopropoxyethanol, ethylene glycol monoisopropyl ether)

The statement is derived form the properties of the components.

Further information
Preparation not tested.

12. Ecological information

Ecotoxicity
No data available

Further information
product has not been tested.
Do not allow uncontrolled leakage of product into the environment.

13. Disposal considerations

Advice on disposal
Appropriate disposal / Product: Remove according to the regulations.
Contaminated packaging: Cleaned containers may be recycled.

14. Transport information

Land transport (ADR/RID)
UN number : 1993
ADR/RID class : 3
Classification code : F1
Warning plate
Hazard-no. : 30
Hazard label : 3
ADR/RID packing group : III
Limited quantity : LQ7

Description of the goods
FLAMMABLE LIQUID, N.O.S. (Ethylenglycolmonoisopropylether, Ethyl 3-ethoxypropionate)

Remarks (land transport)
Special Provisions: 274 330 601 640E
Transport Category: 3
Tunnel Restriction Code: E
**Inland waterways transport**

**Remarks (inland waterways transport)**

Not classified for this carrier.

**Marine transport**

- **UN number**: 1993
- **IMDG code**: 3
- **Marine pollutant**: •
- **Hazard label**: 3
- **IMDG packing group**: III
- **EmS**: F-E, S-E
- **Limited quantity**: 5 L

**Description of the goods**

FLAMMABLE LIQUID, N.O.S. (Ethylene glycolmonoisopropylether, Ethyl 3-ethoxypropionate)

**Remarks (marine transport)**

Special Provisions: 223, 330, 274, 944, 955

**Air transport**

- **UN/ID number**: 1993
- **ICAO/IATA-DGR**: 3
- **Hazard label**: 3
- **ICAO packing group**: III
- **Limited quantity Passenger**: 10 L
- **IATA-packing instructions - Passenger**: 309
- **IATA-max. quantity - Passenger**: 60 L
- **IATA-packing instructions - Cargo**: 310
- **IATA-max. quantity - Cargo**: 220 L

**Description of the goods**

FLAMMABLE LIQUID, N.O.S. (Ethylene glycolmonoisopropylether, Ethyl 3-ethoxypropionate)

**Remarks (air transport)**

Passenger-LQ: Y309

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**15. Regulatory information**

**Labelling**

- **Danger symbols**: Xn - Harmful

- **Xn - Harmful**

**Hazardous component(s) to be indicated on label**

2-isoproxy ethanol, ethylene glycol monoisopropyl ether

**R phrases**

- 10 Flammable.
- 20/21 Harmful by inhalation and in contact with skin.
- 36/37/38 Irritating to eyes, respiratory system and skin.

**S phrases**

- 46 If swallowed, seek medical advice immediately and show this container or label.
- 51 Use only in well-ventilated areas.
- 24/25 Avoid contact with skin and eyes.
- 36/37 Wear suitable protective clothing and gloves.
National regulatory information

Employment restrictions:
Observe employment restrictions for young people.; Observe employment restrictions for child bearing mothers and nursing.

Water contaminating class:
1 - slightly water contaminating

16. Other information

Full text of R-phrases referred to under sections 2 and 3

10 Flammable.
20/21 Harmful by inhalation and in contact with skin.
36 Irritating to eyes.
36/37/38 Irritating to eyes, respiratory system and skin.
36/38 Irritating to eyes and skin.

Further Information
The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.
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.)