

# Safety Data Sheet

according to Regulation (EU) No. 1907/2006

## Remover for Photoresist mr-Rem 660

Print date : 26.5.2008

Product code : R843000

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

Product group : Remover

#### Identification of the substance or preparation

Remover for Photoresist mr-Rem 660

#### Use of the substance/preparation

Chemical Speciality

#### Company/undertaking identification

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

### 2. Hazards identification

#### Classification

Indications of danger : Irritant

R-phrases :

Irritating to eyes and skin.

### 3. Composition/information on ingredients

Chemical characterization ( preparation )

#### Hazardous components

EC-No.	CAS-No.	Chemical name	Quantity	Classification
212-828-1	872-50-4	N-methyl-2-pyrrolidone	50-100%	Xi R36/38

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

### 4. First aid measures

#### After inhalation

Provide fresh air. If victim is at risk of losing consciousness, position and transport on their side.  
Consult physician.

#### After contact with skin

After contact with skin, wash immediately with: Water. Change contaminated clothing.

#### 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

Foam. Carbon dioxide (CO<sub>2</sub>). ABC powder. Water.

#### Special exposure hazards arising from substance or preparation itself, combustion products, resulting gases

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Vapours are heavier than air and will spread at floor level. Heating may cause an explosion. 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 (NO<sub>x</sub>).

#### Special protective equipment for fire-fighters

In case of fire: Wear self-contained breathing apparatus. Wear chemical resistant suit.

### 6. Accidental release measures

#### Personal precautions

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

#### Environmental precautions

Do not empty into drains or the aquatic environment.

#### Methods for cleaning up/taking up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Do not rinse down with water. Treat the assimilated material according to the section on waste disposal. Clear contaminated area thoroughly.

### 7. Handling and storage

#### Handling

##### Advice on safe handling

Provide for sufficient ventilation and punctiform suction at critical points.

#### Storage

##### Requirements for storage rooms and vessels

Keep container tightly closed and in a well-ventilated place. Suitable material for floor covering: Solvent-proof. storage temperature: of °C: 15 up to °C: 25

Storageclass (VCI) : 10

### 8. Exposure controls/personal protection

#### Exposure limit values

##### Exposure limits (EH40)

CAS-No.	Chemical name	ml/m <sup>3</sup>	mg/m <sup>3</sup>	F/ml	Category	Origin
872-50-4	1-Methyl-2-pyrrolidone	25	103		TWA (8 h)	WEL
		75	309		STEL (15 min)	WEL

#### Exposure controls

##### Protective and hygiene measures

When using do not eat, drink or smoke. After work, wash hands and face. Take off immediately all contaminated clothing. Protect skin by using skin protective cream.

##### Respiratory protection

Respiratory protection required in case of: aerosol or mist generation. Filter respirator (full mask or mouth-piece) with filter: A

##### Hand protection

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

Duration of wearing with permanent contact:  
 Suitable material: Butyl rubber.  
 Layer thickness: 0.7 mm  
 penetration time (maximum wearing period): > 480 min  
 Recommended protective gloves brand: KCL 898 Butoject, Manufacturer: KCL GmbH, D-36124  
 Eichenzell, Source of supply: www.kcl.de

Duration of wearing with occasional contact (splashes):  
 Suitable material: NR (Natural rubber (Caoutchouc), Natural latex).  
 Layer thickness: 0.6 mm  
 penetration time (maximum wearing period): > 60 min  
 Recommended protective gloves brand: KCL 706 Lapren, Manufacturer: KCL GmbH, D-36124  
 Eichenzell, Source of supply: www.kcl.de

In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

#### Eye protection

Tightly sealed safety glasses.

#### 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 : light yellow - clear  
 Odour : like: amines

### Important health, safety and environmental information

#### Changes in the physical state

	Test method
Boiling point :	202 °C
Flash point :	91-95 °C
Lower explosion limits :	1.3 vol. %
Upper explosion limits :	9.5 vol. %
Vapour pressure :	0.32 hPa
(at 20 °C)	
Vapour pressure :	1.33 hPa
(at 40 °C)	
Density (at 20 °C) :	1.03 g/cm <sup>3</sup>
Water solubility :	1000 g/L
(at 25 °C)	
Viscosity / dynamic :	<7 mPa·s
(at 20 °C)	

### Other information

Ignition temperature : 245 °C

## 10. Stability and reactivity

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#### Conditions to avoid

UV-radiation/sunlight. heat. Take precautionary measures against static discharges.

#### Materials to avoid

Violent reaction with: Oxidizing agents. acid.

#### Hazardous decomposition products

nitrogen oxides (NOx).

### 11. Toxicological information

#### Acute toxicity

Acute toxicity, inhalant LC50: 3.1-8.8 mg/l/4h species: Rat.

Acute toxicity, dermal LD50: 8000 mg/kg species: Rabbit.

Acute toxicity, oral LD50: 3598 mg/kg species: Rat.

### 12. Ecological information

#### Ecotoxicity

Acute fish toxicity *Lepomis macrochirus* LC50: 832 mg/l/96h

Acute Daphnia toxicity *Daphnia magna* EC50: ~4897 mg/l/48h

Algae toxicity *Scenedesmus subspicatus* IC50: >500 mg/l/72h

Bacterial toxicity: EC50: >9000 mg/l/48h

Technically correct releases of minimal concentrations to adapted biological sewage treatment facility, will not disturb the biodegradability of activated sludge.

#### Persistence and degradability

Biological degradation: Easily biodegradable (concerning to the criteria of the OECD)

#### Bioaccumulative potential

Distribution coefficient (n-octanol / water) (log P O/W): -0.46 at °C: 25

On the basis of existing data about disposal/decomposition and bio-accumulation potential, long term environmental damage is unlikely.

Henry constant: 0.00158 Pa\*m<sup>3</sup>/mol

#### Further information

Do not allow uncontrolled leakage of product into the environment.

### 13. Disposal considerations

#### Advice on disposal

Waste disposal according to official state regulations.

### 14. Transport information

#### Further Information

Not a hazardous material with respect to these transportation regulations.

### 15. Regulatory information

#### Labelling

Danger symbols :

Xi - Irritant



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**R phrases**

36/38 Irritating to eyes and skin.

**S phrases**

41 In case of fire and/or explosion do not breathe fumes.

**EU regulatory information**

1999/13/EC (VOC) :

This chemical is a VOC according to 99/13/EC. Volatile organic compounds (VOC) in percentage by weight: 100 % (1030 g/l)

**National regulatory information**

Employment restrictions :

Observe employment restrictions for young people.

Water contaminating class :

1 - slightly water contaminating

**16. Other information****Full text of R-phrases referred to under sections 2 and 3**

36/38 Irritating to eyes and skin.

**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.

**Changes**

\* Data changed from previous versions

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