

## Safety Data Sheet

according to 29 CFR 1910.1200(g)

### mr-DWL Series

Print date: 15.02.2016

Product code: A\_USA\_mr-DWL

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## 1. Identification

### Product identifier

mr-DWL Series

### Recommended use of the chemical and restrictions on use

#### Use of the substance/mixture

Photoresist

Product Categories [PC] 30: Photosensitive agent and other photochemicals

Sector of uses [SU] 16: Manufacture of computer, electronic and optical products, electrical equipment.

#### Uses advised against

Do not use for private purposes (household).

### 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	

**Emergency phone number:** Chemtrec (International): +1 703 527 3887

## 2. Hazard(s) identification

### Classification of the chemical

Hazard categories:

Flammable liquid: Flam. Liq. 4

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory/skin sensitization: Skin Sens. 1

Specific target organ toxicity - single exposure: STOT SE 3

Hazard Statements:

Combustible liquid

Causes severe skin burns and eye damage

May cause an allergic skin reaction

May cause drowsiness or dizziness

### Label elements

Signal word:

Danger

Pictograms:

corrosion; exclamation mark



### Hazard statements

Combustible liquid

Causes severe skin burns and eye damage

May cause an allergic skin reaction

May cause drowsiness or dizziness

### Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep cool.

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Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves/protective clothing/eye protection/face protection.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Dispose of contents/container to ....

#### **Hazards not otherwise classified**

No information available.

### 3. Composition/information on ingredients

#### **Mixtures**

##### **Hazardous components**

CAS No	Components	Quantity
28906-96-9	epoxy resin	20 - 70 %
96-48-0	Gamma Butyrolactone	15 - 60 %
108-32-7	propylene carbonate	1 - 15 %
60565-88-0	bis(p-tolyl)iodonium hexafluorophosphate	1 - 15 %

### 4. First-aid measures

#### **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**

Rinse mouth immediately and drink plenty of water.

Caution if victim vomits: Risk of aspiration!

Medical treatment necessary.

#### **Most important symptoms and effects, both acute and delayed**

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause drowsiness or dizziness.

#### **Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

### 5. Fire-fighting measures

#### **Extinguishing media**

##### **Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>). Dry extinguishing powder. Foam.

##### **Unsuitable extinguishing media**

High power water jet.

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#### Specific hazards arising from the chemical

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

#### Special protective equipment and precautions for fire-fighters

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

#### Additional information

Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### 6. Accidental release measures

#### 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.

#### Environmental precautions

Do not allow to enter into surface water or drains.

#### 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 objects and areas thoroughly observing environmental regulations.

#### Reference to other sections

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

### 7. Handling and storage

#### Precautions for safe handling

##### **Advice on safe handling**

Use only in well-ventilated areas. Keep away from sources of ignition. - No smoking.

##### **Advice on protection against fire and explosion**

Take precautionary measures against static discharge.

#### Conditions for safe storage, including any incompatibilities

##### **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 discharge.  
Suitable floor material: Solvent-proof.

##### **Further information on storage conditions**

Protect against: heat. UV-radiation/sunlight.

### 8. Exposure controls/personal protection

#### Control parameters

##### **Additional advice on limit values**

No data available

#### Exposure controls



##### **Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe

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gas/fumes/vapour/spray. Wear personal protection equipment. Provide adequate ventilation.

#### Protective and hygiene measures

When using do not eat, drink or smoke. Protect skin by using skin protective cream. After work, wash hands and face. Immediately remove any wetted clothing, shoes or stockings.

#### Eye/face protection

Suitable eye protection: Tightly sealed safety glasses.

#### Hand protection

Tested protective gloves are to be worn:

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):

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 allow uncontrolled leakage of product into the environment.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Physical state:	liquid
Color:	colourless
Odor:	characteristic

#### Test method

pH-Value: No data available

#### Changes in the physical state

Melting point/freezing point: No data available

Initial boiling point and boiling range: 204 °C Gamma Butyrolactone

Sublimation point: No data available

Softening point: No data available

Pour point: No data available

Flash point: >70 °C DIN EN ISO 13736

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#### Flammability

Solid: No data available

Gas: No data available

#### Explosive properties

No data available

Lower explosion limits: 2,7 vol. %

Upper explosion limits: 15,6 vol. %

Ignition temperature: 430 °C

#### Auto-ignition temperature

Solid: No data available

Gas: No data available

Decomposition temperature: No data available

#### Oxidizing properties

No data available

 Vapor pressure:  
(at 20 °C) 0,4 hPa

Density: No data available

Water solubility: No data available

#### Solubility in other solvents

No data available

Partition coefficient: No data available

Viscosity / dynamic: No data available

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

#### Other information

No data available

### 10. Stability and reactivity

#### Reactivity

No data available

#### Chemical stability

Stability: Stable

No data available

#### Possibility of hazardous reactions

Hazardous reactions: Will not occur

No data available

#### Conditions to avoid

UV-radiation/sunlight.

Keep away from heat. Ignition hazard.

Only use the material in places where open light, fire and other flammable sources can be kept away.

Take precautionary measures against static discharge.

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#### Incompatible materials

Oxidizing agents.  
Acid, concentrated.  
Alkalis (alkalis), concentrated.

#### Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

## 11. Toxicological information

### Information on toxicological effects

#### Route(s) of Entry

inhalation, ingestion, skin contact, eye contact

#### Acute toxicity

There are no data available on the mixture itself.

CAS No	Components				
	Exposure routes	Method	Dose	Species	Source
96-48-0	Gamma Butyrolactone				
	oral	LD50	1540 mg/kg	Rat	IUCLID
108-32-7	propylene carbonate				
	oral	LD50	34600 mg/kg	Rat	GESTIS
	dermal	LD50	> 23800 mg/kg	Rabbit	GESTIS

#### Irritation and corrosivity

Causes severe skin burns and eye damage.  
Method: Calculation method.

#### Sensitizing effects

May cause an allergic skin reaction.  
Method: Calculation method.

#### Specific target organ toxicity (STOT) - single exposure

May cause drowsiness or dizziness.  
Method: Calculation method.

#### Severe effects after repeated or prolonged exposure

There are no data available on the mixture itself.

#### Carcinogenic/mutagenic/toxic effects for reproduction

There are no data available on the mixture itself.

Carcinogenicity (NTP): Ingredient (name): none

Carcinogenicity (IARC): gamma-Butyrolactone (CAS 96-48-0) is listed in group 3.

Carcinogenicity (OSHA): Ingredient (name): none

#### Aspiration hazard

There are no data available on the mixture itself.

## 12. Ecological information

### Ecotoxicity

There are no data available on the mixture itself.

### Persistence and degradability

There are no data available on the mixture itself.

### Bioaccumulative potential

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There are no data available on the mixture itself.

#### Mobility in soil

No data available

#### Other adverse effects

No data available

### 13. Disposal considerations

#### Waste treatment methods

##### **Advice on disposal**

Appropriate disposal/Product: Remove according to the regulations.  
Consult the appropriate local waste disposal expert about waste disposal. Do not allow to enter into surface water or drains.

##### **Contaminated packaging**

Appropriate disposal/Product: Remove according to the regulations.  
Consult the appropriate local waste disposal expert about waste disposal.

### 14. Transport information

#### **US DOT 49 CFR 172.101**

<b><u>UN/ID number:</u></b>	UN 1760
<b><u>Proper shipping name:</u></b>	CORROSIVE LIQUID, N.O.S. (bis(p-tolyl)iodonium hexafluorophosphate)
<b><u>Transport hazard class(es):</u></b>	8
<b><u>Packing group:</u></b>	II
Hazard label:	8

#### **Marine transport (IMDG)**

<b><u>UN number:</u></b>	UN 1760
<b><u>UN proper shipping name:</u></b>	CORROSIVE LIQUID, N.O.S. (bis(p-tolyl)iodonium hexafluorophosphate)
<b><u>Transport hazard class(es):</u></b>	8
<b><u>Packing group:</u></b>	II
Hazard label:	8



Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-A, S-B

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

<b><u>UN number:</u></b>	UN 1760
<b><u>UN proper shipping name:</u></b>	CORROSIVE LIQUID, N.O.S. (bis(p-tolyl)iodonium hexafluorophosphate)
<b><u>Transport hazard class(es):</u></b>	8
<b><u>Packing group:</u></b>	II
Hazard label:	8



Limited quantity Passenger:	0.5 L
Passenger LQ:	Y840

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Excepted quantity:	E2	
IATA-packing instructions - Passenger:		851
IATA-max. quantity - Passenger:		1 L
IATA-packing instructions - Cargo:		855
IATA-max. quantity - Cargo:		30 L

#### Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

#### Special precautions for user

No data available

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

### 15. Regulatory information

#### U.S. Regulations

##### National Inventory TSCA

bis(p-tolyl)iodonium hexafluorophosphate - CAS 60565-88-0 - NOT LISTED

For R&amp;D use only. Not for drug, household or other uses.

##### National regulatory information

SARA Section 311/312 Hazards:

Epoxidharz (28906-96-9): Immediate (acute) health hazard

Gamma-Butyrolacton (96-48-0): Immediate (acute) health hazard

Propylencarbonat (108-32-7): Immediate (acute) health hazard

bis(p-tolyl)iodonium hexafluorophosphate (60565-88-0): Immediate (acute) health hazard

#### State Regulations

##### Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

This product contains no chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

### 16. Other information

#### Hazardous Materials Information Label (HMIS)

Health:	3
Flammability:	1
Physical Hazard:	0
Personal Protection:	C

#### NFPA Hazard Ratings

Health:	3
Flammability:	1
Reactivity:	0
Unique Hazard:	/



#### Changes

Revision date:	12.02.2016
Revision No:	
Chapter:	1, 2, 3, 4, 6, 8, 9, 10, 12, 13, 14, 15, 16

#### Other data

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



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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.)*