

Trade Name: Negative Tone Photoresist ma-N 2403**1. Identification of preparation and company***Product identification***Negative Tone Photoresist ma-N 2403***Identification of manufacturer/address***micro resist technology GmbH****Koepenicker Str. 325****Tel. +49 - 30 - 6576 2192****D-12555 Berlin****Fax +49 - 30 - 6576 2193****2. Composition / Information on ingredients**

Photoactive compound and novolak dissolved in mixture of organic liquids.

The product contains the following dangerous components:

2.1. 1-Methyl-2-pyrrolidone

CAS: 872-50-4

EINECS: 212-828-1

UN: -

2.2. n-Butyl acetate

CAS: 123-86-4

EINECS: 204-658-1

UN: 1123

2.3. Cyclohexanone

CAS: 108-94-1

EINECS: 203-631-1

UN: 1915

3. Hazards identification

The handling of this product has to be carefully. Injury can be excluded if manipulation is mindful.

The product is flammable.

4. First-Aid Measures*After inhalation:*

Fresh air, if necessary breath donation, in case of unconsciousness: stable side position for transport.

After skin contact:

Wash off with plenty of water and soap.

After eye contact:

Rinse out with plenty of water, consult a doctor.

If swallowed:

Drink plenty of water, in case of persistent symptoms consult a doctor.

5. Fire fighting measures*Suitable extinguishing media:*Foam, CO₂, Powder.*Extinguishing media to be avoided:*

Water.

Protective firefighting equipment:

Self-contained breathing apparatus with full facepiece operated in positive pressure mode.

6. Accidental release measures*Person-related safety precautions:*

Ensure well ventilation, do not inhale aerosols, remove ignition sources.

Environmental protection measures:

Prevent reaching drainage system, holes, cellars, ground or ground water. If needed alarm neighbourhood.

Cleaning measures:

Take up with liquid-binding material. Forward for disposal. Do not flush away with water.

Pay attention to item 8 and 13.

7. Handling and storage*Handling*

Ensure well ventilation/exhaustion at workplace.

Storage

Tightly closed in well-ventilated place. Protect from light. Store at room temperature. Keep away from sources of ignition and heat. Protect against electrostatic charges.

Pay attention to regulation on inflammable liquids.

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8. Exposure controls / personal protection

Limit values at workplace

Exposure limits [ml/m³ / mg/m³]

19 / 80	1-Methyl-2-pyrrolidone
100 / 480	n-Butyl acetate
- / -	Cyclohexanone

Personal protective equipment

Breathing protection not required if room is well-ventilated
 Hand protection required
 Eye protection required
 Body protection Protective work clothing
 Industrial hygiene Don't drink, eat or smoke. Change contaminated clothing. Wash hands and face after working with substance.

9. Physical and chemical properties

Form	liquide	
Colour	red-brown	
Odour	aromatic	
Density (25 °C)	1.028 g/cm ³	
Viscosity (25 °C, D= 1000 s ⁻¹)	10 mPas	
Flash point	45.0°C	
Solubility in Water (25 °C)	insoluble	
Boiling point	202 °C	1-Methyl-2-pyrrolidone
	127 °C	n-Butyl acetate
	~156 °C	Cyclohexanone
Vapour pressure	1.33 hPa (40 °C)	1-Methyl-2-pyrrolidone
	13 hPa (20 °C)	n-Butyl acetate
	4.0 hPa (20 °C)	Cyclohexanone
Ignition temperature	430 °C	1-Methyl-2-pyrrolidone
	370 °C	n-Butyl acetate
	370 °C	Cyclohexanone
Explosion limits	1.3 – 9.5 Vol-%	1-Methyl-2-pyrrolidone
	1.2 - 7.5 Vol-%	n-Butyl acetate
	1.3 – 9.4 Vol-%	Cyclohexanone

10. Stability and reactivity

Conditions to avoid:
 Sunlight, heating, ignition sources, electro-static charge
Materials to avoid:
 Oxidizing agents
Hazardous decomposition products:
 Not known

11. Toxicological information

Acute toxicity:
 LD50 (oral,rat): 3598 mg/kg 1-Methyl-2-pyrrolidone
 10768 mg/kg n-Butyl acetate
 1540 mg/kg Cyclohexanone
Further toxicological information:
 Poison class CH: - 1-Methyl-2-pyrrolidone
 5 n-Butyl acetate
 4 Cyclohexanone

12. Ecological information

Quantitative ecological data are not available.
 Avoid release to environment.

13. Disposal

Product:
 Disposal as halogen-free organic solvent.
 EAK-Key: 140503
Packaging:
 If contaminated like the substance itself.
 EAK-Key: 150199D1
 Not contaminated: Recycling/Household waste.
 Dispose in accordance with all applicable federal, state and local environmental regulations.

Trade Name: Negative Tone Photoresist ma-N 2403**14. Transport information***UN-No.: 1866*

Land transport: Designation: Resin Solution
GGVE/GGVS: 3/31c RID/ADR: 3/31c Kemler number: 30

Maritime transport: Designation: Resin Solution
Packaging group III
IMDG: 3.3/III EMS: 3-07 MFAG: 330

Air transport: Designation: Resin Solution
Packaging group III
IATA-DGR CAO: 3 Packaging instruction: 310
IATA-DGR PAX: 3 Packaging instruction: 309

15. Regulatory information*Germany:*

Pack-Kat.: A
LGK: 3A
WGK: 1
VbF: All

Hs-No.: 29142200 1-Methyl-2-pyrrolidone
29153300 n-Butyl acetate
29142200 Cyclohexanone

EU Classification:

Danger symbol: Xi, Xn – irritant, harmful
R-Phrases: 10-20-36/38-66-67 Flammable. Harmful by inhalation. Irritating to the eyes and skin. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

S- Phrases: 25-41 Avoid contact with eyes. In case of fire and/or explosion do not breath fumes.

16. Other information

Replaces version of 06-Dez-00
Reason of revision: Update of physical properties

All information in this paper is based on the present state of our knowledge but may vary in certain limits and does not have the meaning of a guarantee of any product features.