Safety Data Sheet

Developer for Photoresist ma-D 525

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

Product group: Entwickler

Identification of the substance or preparation
Developer for Photoresist ma-D 525

Use of the substance/preparation
Chemical Speciality

Company/undertaking identification

Company name: micro resist technology GmbH
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Place: D-12555 Berlin
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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)
Tetramethylammonium hydroxide in aqueous solution

Hazardous components

<table>
<thead>
<tr>
<th>EC-No.</th>
<th>CAS-No.</th>
<th>Chemical name</th>
<th>Quantity</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-882-9</td>
<td>75-59-2</td>
<td>Tetramethylammonium hydroxide</td>
<td>1,0-&lt;2,5 %</td>
<td>T, N R24-34-50</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. In case of troubles or persistent symptoms, consult an ophthalmologist.

After contact with skin
After contact with skin, wash immediately with plenty of water. 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. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion
Rinse mouth thoroughly with water. Let water be swallowed in little sips (dilution effect). Immediately get medical attention.

Advice to doctor
Treat symptomatically.

5. Fire-fighting measures
Suitable extinguishing media
  Material is not combustible.

Extinguishing media which must not be used for safety reasons
  Extinguishing materials should be selected according to the surrounding area.

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

Additional information
  Thermal decomposition can lead to the escape of irritating gases and vapors.

6. Accidental release measures

Personal precautions
  Wear personal protection equipment.

Environmental precautions
  Do not empty into drains or the aquatic environment. In case of gas being released or leakage into waters, ground or the drainage system, the appropriate authorities must be informed.

Methods for cleaning up/taking up
  Soak up inert absorbent and dispose as waste requiring special observation.

7. Handling and storage

Handling
  Advice on safe handling
    Use only in well-ventilated areas. Avoid contact with skin and eyes. Keep container tightly closed.

Further information on handling
  No special measures are necessary.

Storage
  Requirements for storage rooms and vessels
    Keep only in the original container in a cool, well-ventilated place. Keep container dry. Protect against: UV-radiation/sunlight.

8. Exposure controls/personal protection

Exposure limit values

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

Respiratory protection
  Respiratory protection required in case of: aerosol or mist generation.

Hand protection
  Tested protective gloves are to be worn: Suitable material: Butyl rubber.
  Type of chemical protective gloves to choose depends on the concentration and quantity of dangerous substances as well as on work place specifications.

Eye protection
  Tightly sealed safety glasses.

Skin protection
  Suitable protection of the body: Lab apron.
  Take off immediately all contaminated clothing.
9. Physical and chemical properties

General information
- Physical state: liquid
- Colour: colourless
- Odour: like: amines

Important health, safety and environmental information
- Test method
  - pH-Value (at 20 °C): 12

Changes in the physical state
- Boiling point: ~100 °C
- Flash point: not applicable
- Lower explosion limits: not applicable
- Upper explosion limits: not applicable
- Density (at 20 °C): 1.00 g/cm³
- Water solubility: highly soluble.
- Viscosity / dynamic: <7 mPa·s (at 25 °C)

10. Stability and reactivity

Conditions to avoid
- Product is stable in the test system throughout the duration of the test.

Materials to avoid
- acid. Oxidizing agents.

Hazardous decomposition products
- Can be released in case of fire: Nitrogen oxides (NOx). Carbon monoxide. Carbon dioxide.

11. Toxicological information

Acute toxicity
- Acute toxicity, oral LD50: 50 mg/kg species: Rat.
- Acute toxicity, dermal LD50: 25 mg/kg species: Guinea-pig.
- Data apply to the technical substance.

12. Ecological information

Ecotoxicity
- Acute Daphnia toxicity EC50: 10 - 100 mg/l /48h species: Daphnia magna
- No important reduction of damage observed following neutralisation. Toxic to aquatic organisms. Ecological information refers to active component.

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

Land transport (ADR/RID)
Description of the goods

Not a hazardous material with respect to these transportation regulations.

Marine transport

Description of the goods

Not a hazardous material with respect to these transportation regulations.

Air transport

Description of the goods

Not a hazardous material with respect to these transportation regulations.

15. Regulatory information

Labelling

Danger symbols : Xi - Irritant

Xi - Irritant

R phrases

36/38 Irritating to eyes and skin.

S phrases

24/25 Avoid contact with skin and eyes.

Additional advice on labelling

The classification was carried out for tested properties according to the substance directive (67/548/EWG), annex VI, otherwise according to the calculation procedure described in the preparation directive (1999/45/EG).

National regulatory information

Water contaminating class : - - not water contaminating

16. Other information

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

24 Toxic in contact with skin.

34 Causes burns.

36/38 Irritating to eyes and skin.

50 Very toxic to aquatic organisms.

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.

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