

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Developer for Photoresist ma-D 533 & ma-D 533 S

Print date: 01.05.2013

Product code: R81336X

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Developer for Photoresist ma-D 533 & ma-D 533 S

Product group: Entwickler

Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Manufacture of computer, electronic and optical products, electrical equipment.

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 telephone: +49 30 641670-100

Further Information

This number is serviced during office hours.

SECTION 2: Hazards identification

Classification of the substance or mixture

Indications of danger : Corrosive, Harmful

R-phrases:

Harmful in contact with skin and if swallowed.

Causes burns.

GHS classification

Hazard categories:

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1C

Serious eye damage/eye irritation: Eye Dam. 1

Specific target organ toxicity - repeated exposure: STOT RE 2

Hazard Statements:

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause damage to organs through prolonged or repeated exposure.

Label elements

Hazardous components which must be listed on the label

Tetramethylammonium hydroxide

Signal word:

Danger

Pictograms:

GHS05-GHS07-GHS08



Hazard statements

H302

Harmful if swallowed.

H314

Causes severe skin burns and eye damage.

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H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P270 Do not eat, drink or smoke when using this product.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
 P330 Rinse mouth.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P332+P313 If skin irritation occurs: Get medical advice/attention.
 P362 Take off contaminated clothing and wash before reuse.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER or doctor/physician.
 P314 Get medical advice/attention if you feel unwell.

Other hazards

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

SECTION 3: Composition/information on ingredients

Mixtures

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
200-882-9	Tetramethylammonium hydroxide	1 - 5 %
75-59-2	T, C R24/25-34-52	
	Acute Tox. 2, Acute Tox. 2, Skin Corr. 1, STOT RE 1; H300 H310 H314 H372	

Full text of R- and H-phrases: see section 16.

SECTION 4: First aid measures

Description of first aid measures

General information

In case of accident or if you feel unwell, seek medical advice immediately (show safety data sheet if possible). Take off immediately all contaminated clothing.

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

Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink large quantities of water.
 Caution if victim vomits: Risk of aspiration!
 Medical treatment necessary.

Most important symptoms and effects, both acute and delayed

Harmful if swallowed.

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Causes severe skin burns and eye damage.
May cause damage to organs.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Extinguishing materials should be selected according to the surrounding area. The product itself is not combustible.

Water. Carbon dioxide (CO₂). Dry extinguishing powder. Foam.

Extinguishing media which must not be used for safety reasons

No data available

Special hazards arising from the substance or mixture

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

Advice for firefighters

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

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 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, eye and clothing. Wear personal protection equipment.

Environmental precautions

Do not empty into drains or the aquatic environment.

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 assimilated material according to the section on waste disposal.
See protective measures under point 7 and 8.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling

Use only in well-ventilated areas. Do not breathe vapour or spray. Avoid contact with skin, eye and clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed and in a well-ventilated place. storage temperature: of °C: 18 up to °C: 25

Protect against: UV-radiation/sunlight.

Suitable material for floor covering: Leachate-proof.

Further information on storage conditions

Keep container tightly closed.

Specific end use(s)

No data available

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SECTION 8: Exposure controls/personal protection

Control parameters

Additional advice on limit values

No data available

Exposure controls



Occupational exposure controls

In case of open handling equipment with built-in suction must be used. Do not breathe gas/fumes/vapour/spray. Wear personal protection equipment. Provide adequate ventilation.

Protective and hygiene measures

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

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.
German Industry Norms (DIN) / European Norms (EN): DIN EN 374

Duration of wearing with permanent contact:

Suitable material: NBR (Nitrile rubber).

Thickness of glove material: 0.11 mm

penetration time (maximum wearing period): > 480 min

Recommended protective gloves brand: KCL 740 Dermatril, Manufacturer: KCL GmbH, D-36124

Eichenzell, Source of supply: www.kcl.de

Duration of wearing with occasional contact (splashes):

Suitable material: NBR (Nitrile rubber).

Thickness of glove material: 0.11 mm

penetration time (maximum wearing period): > 480 min

Recommended protective gloves brand: KCL 740 Dermatril, 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

Suitable 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).

Take off immediately all contaminated clothing.

Environmental exposure controls

Do not empty into drains.

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SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state: liquid
 Colour: colourless

Test method

pH-Value (at 25 °C): >12

Changes in the physical state

Melting point: No data available
 Boiling point: ~100 °C
 Flash point: Non-flammable.

Explosive properties

No data available

Lower explosion limits: not applicable

Upper explosion limits: not applicable

Ignition temperature: not applicable

Oxidizing properties

No data available

Vapour pressure: No data available

Density: 1,0 g/cm³

Water solubility: miscible.

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

Other information

No data available

SECTION 10: Stability and reactivity

Reactivity

Response: Do not mix with acids. Oxidizing agents, strong.

Chemical stability

No data available

Possibility of hazardous reactions

Response: Do not mix with acids. Oxidizing agents, strong.

Conditions to avoid

No data available

Incompatible materials

Strong acid
 Oxidizing agents.

Hazardous decomposition products

Can be released in case of fire: Nitrogen oxides (NO_x). Carbon monoxide. Carbon dioxide.

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SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Mixture related information

Acute toxicity (dermal): LD50: > 2000 mg/kg Rat. (OECD 402)

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
75-59-2	Tetramethylammonium hydroxide				
	oral	LD50	34 mg/kg	Rat.	
	dermal	LD50	112 mg/kg	Rat.	

Irritation and corrosivity

Mixture related information

Results from in vitro test for skin corrosivity/irritancy: corrosive. (OECD 431.)

Additional information on tests

No data available

SECTION 12: Ecological information

Toxicity

No data available

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	h	Species	Source
75-59-2	Tetramethylammonium hydroxide					
	Acute fish toxicity	LC50	462 mg/l	96	Pimephales promelas	
	Acute algae toxicity	ErC50	96 mg/l	72	Pseudokirchneriella subcahitata	
	Acute crustacea toxicity	EC50	13,9 mg/l	48	Daphnia magna	

Persistence and degradability

No data available

Bioaccumulative potential

Tetramethylammonium hydroxide Distribution coefficient (n-octanol / water) (log P O/W): 0,9

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
75-59-2	Tetramethylammonium hydroxide	0,9

Mobility in soil

No data available

Results of PBT and vPvB assessment

No data available

Other adverse effects

No data available

SECTION 13: Disposal considerations

Waste treatment methods

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Advice on disposal

Do not empty into drains or the aquatic environment. Waste disposal according to official state regulations.

Contaminated packaging

Water (with cleaning agent). Waste disposal according to official state regulations.

SECTION 14: Transport information

Land transport (ADR/RID)

UN number: UN1835
UN proper shipping name: TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Transport hazard class(es): 8
Packing group: III
 Hazard label: 8



Classification code: C7
 Limited quantity: 5 L
 Transport category: 3
 Hazard No: 80
 Tunnel restriction code: E

Other applicable information (land transport)

Excepted Quantity: E1

Marine transport

UN number: UN1835
UN proper shipping name: TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Transport hazard class(es): 8
Packing group: III
 Hazard label: 8



Special Provisions: 223
 Limited quantity: 5 L
 EmS: F-A, S-B

Other applicable information (marine transport)

Excepted Quantity: E1

Air transport

UN/ID number: UN1835
UN proper shipping name: TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Transport hazard class(es): 8
Packing group: III
 Hazard label: 8

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Special Provisions:	A3 A803
Limited quantity Passenger:	1 L
IATA-packing instructions - Passenger:	852
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	856
IATA-max. quantity - Cargo:	60 L

Other applicable information (air transport)

Excepted Quantity: E1
Passenger-LQ: Y841

Environmental hazards

Dangerous for the environment: no

Special precautions for user

No data available

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulatory information

Employment restrictions:	Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.
Water contaminating class (D):	1 - slightly water contaminating

Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

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

21/22	Harmful in contact with skin and if swallowed.
24/25	Toxic in contact with skin and if swallowed.
34	Causes burns.
52	Harmful to aquatic organisms.

Full text of H-Statements referred to under sections 2 and 3

H300	Fatal if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.

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.

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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.)