1. Identification

Product identifier

Remover for Photoresist mr-Rem 700

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

Use of the substance/mixture

Remover for photoresists
Product Categories [PC]: Coatings and paints, thinners, paint removers, Developer liquid
Sector of uses [SU]: Industrial uses. 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 number: Chemtrec (International - 24 h): +1 703 527 3887

2. Hazard identification

Classification of the substance or mixture

WHMIS 2015

Flammable liquid: Flam. Liq. 4
Skin corrosion/irritation: Skin Corr. 1
Serious eye damage/eye irritation: Eye Dam. 1

Label elements

WHMIS 2015

Signal word: Danger

Pictograms:

Hazard statements

Combustible liquid.
Causes severe skin burns and eye damage.

Precautionary statements

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER/doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
In case of fire: Use Foam, Extinguishing powder, Carbon dioxide to extinguish.

Store in a well-ventilated place.
Store locked up.
Dispose of contents/container to an appropriate recycling or disposal facility.

Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

3. Composition/information on ingredients

Mixtures

Hazardous components

CAS No	Chemical name	Quantity
141-43-5	2-aminoethanol; ethanolamine	3 - 15 %

Further Information

2-aminoethanol, ethanolamine:
List substance (Regulation (EC) No. 1272/2008, Annex VI, part 3)
Specific Concentration limits:
STOT SE 3; H335: C >= 5%

4. First-aid measures

Description of first aid measures

After inhalation

Provide fresh air.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap.
Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

Most important symptoms and effects, whether acute or delayed

No information available.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Specific hazards arising from the hazardous product

No information available.

Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. 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

General advice

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

Environmental precautions

Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary . When using do not eat or drink.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.

Hints on joint storage

Do not store together with:
Acid
Food and feedingstuffs

8. Exposure controls/Personal protection

Control parameters

Additional advice on limit values

To date, no national critical limit values exist.

Exposure controls


Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. 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. Tested protective gloves are to be worn:
German Industry Norms (DIN) / European Norms (EN): EN ISO 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): > 10 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

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
Filter types: A, B, E, K. Class 1: Maximum permitted contaminant concentration in inhaled air = 1000 mL/m3 (0.1 % by vol.); class 2: maximum permitted contaminant concentration in inhaled air = 5000 mL/m³ (0.5 % by vol.); class 3: maximum permitted contaminant concentration in inhaled air = 10000 mL/m³ (1.0 % by vol.)

Environmental exposure controls

Do not empty into drains.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	light yellow
Odour:	like: Ammonia (NH3)

Changes in the physical state

Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	171 °C
Flash point:	87 °C

Flammability

Solid/liquid:	not applicable
Gas:	not applicable

Explosive properties
not determined

Lower explosive limits:	2,6 vol. %
Upper explosive limits:	28,5 vol. %
Auto-ignition temperature:	300 °C

Self-ignition temperature

Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not determined
pH-Value:	not determined
Viscosity / dynamic: (at 20 °C)	not determined
Viscosity / kinematic: (at 40 °C)	not determined
Flow time:	not determined
Water solubility:	easily soluble

Solubility in other solvents
not determined

Partition coefficient n-octanol/water:	not determined
Vapour pressure: (at 20 °C)	0,6 hPa
Vapour pressure: (at 50 °C)	23 hPa
Density:	1,09 g/cm³
Relative vapour density:	not determined

Other information

Information with regard to physical hazard classes

Oxidizing properties
Not oxidising.

Other safety characteristics

Solvent separation test:	not determined
Solid content:	not determined
Evaporation rate:	not determined

Further Information

10. Stability and reactivity

Reactivity

Possibility of hazardous reactions. Exothermic reaction with: Acid, Peroxides, Oxidising agent.

Chemical stability

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

Exothermic reaction with: Acid, Peroxides, Oxidising agent.

Conditions to avoid

Heat

Incompatible materials

Keep away from: Acid, Oxidising agent, Peroxides.

Hazardous decomposition products

Carbon monoxide.
Carbon dioxide.
Nitrogen oxides (NOx).

11. Toxicological information

Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name					
	Route of exposure	Dose		Species	Source	Method
141-43-5	2-aminoethanol; ethanolamine					
	oral	LD50 mg/kg	1089	Rat	ECHA	
	dermal	LD50 mg/kg	1025	Rabbit	IUCLID	
	inhalation vapour	ATE	11 mg/l			
	inhalation dust/mist	ATE	1,5 mg/l			

Irritation and corrosivity

Causes severe skin burns and eye damage.
Causes serious eye damage.

Sensitizing effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

inhalation, ingestion, skin contact, eye contact

Additional information on tests

Calculation method.

Information on other hazards

Endocrine disrupting properties

No data available

Name of toxicologically synergistic products

No data available

12. Ecological information

Ecotoxicity

There are no data available on the mixture itself.

Persistence and degradability

Readily biodegradable (according to OECD criteria).

Bioaccumulative potential

There are no data available on the mixture itself.

Mobility in soil

No data available

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.
No data available

Other adverse effects

No information available.

13. Disposal considerations

Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains.
Dispose of waste according to applicable legislation.
Consult the local waste disposal expert about waste disposal.

Contaminated packaging

Dispose of waste according to applicable legislation.
Consult the local waste disposal expert about waste disposal.

14. Transport information

Canadian TDG

UN number:	UN 2491
Proper shipping name:	ETHANOLAMINE SOLUTION
Hazard classes:	8
Packing group:	III
Hazard label:	8
Limited quantity:	5 L

Marine transport (IMDG)

UN number or ID number:	UN 2491
United Nations proper shipping name:	ETHANOLAMINE SOLUTION
Transport hazard class(es):	8
Packing group:	III
Hazard label:	8

Special Provisions:	223
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

UN number or ID number:	UN 2491

United Nations proper shipping name:	ETHANOLAMINE SOLUTION
Transport hazard class(es):	8
Packing group:	III
Hazard label:	8

Special Provisions:	A3 A803
Limited quantity Passenger:	1 L
Passenger LQ:	Y841
Excepted quantity:	E1
IATA-packing instructions - Passenger:	852
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	856
IATA-max. quantity - Cargo:	60 L

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

15. Regulatory information

Canadian regulations

16. Other information

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

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.)