

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

- **Product details**
- **Trade name:** SILIFIX R 16 Hardener
- **Application of the substance / the preparation:** Reaction resin
- **Manufacturer/Supplier:**
Silikal GmbH
Ostring 23
D-63533 Mainhausen
Tel.: +49-6182/9235-0
Fax.: +49-6182/9235-40
e-mail: mail@silikal.de
- **Further information obtainable from:** Environmental department
- **Information in case of emergency:** +49 6182 / 9235-0

2 Hazards identification

- **Hazard description:**



Xi Irritant
F Highly flammable

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 11 Highly flammable.

R 37/38 Irritating to respiratory system and skin.

R 43 May cause sensitisation by skin contact.

- **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

3 Composition/information on ingredients

- **Chemical characterization**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 80-62-6 EINECS: 201-297-1	methyl methacrylate	 Xi,  F; R 11-37/38-43	50-100%
CAS: 99-97-8 EINECS: 202-805-4	N,N-dimethyl-p-toluidine	 T; R 23/24/25-33-52/53	≤ 2.5%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First-aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air and to be sure call for a doctor.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Drink plenty of water and provide fresh air. Call for a doctor immediately.

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5 Fire-fighting measures

- **Suitable extinguishing agents:**
Foam
Sand
CO₂, powder or water spray. Fight larger fire with alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards caused by the substance, its products of combustion or resulting gases:**
Exothermic polymerization.
In case of fire, the following can be released:
Hydrocarbons
Carbon monoxide and carbon dioxide
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information** Cool endangered receptacles with water spray.

6 Accidental release measures

- **Person-related safety precautions:**
Ensure adequate ventilation
Wear protective clothing.
Keep away from ignition sources.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents

7 Handling and storage

- **Handling:**
- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:**
Fumes can combine with air to form an explosive mixture.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store only in the original receptacle.
Store in cool, dry conditions in well sealed receptacles.
Do not allow to enter sewers/ surface or ground water.
Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Store receptacle in a well ventilated area.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Maximum storage temperature:** 25°C

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

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Ingredients with limit values that require monitoring at the workplace:**80-62-6 methyl methacrylate**

WEL	Short-term value: 416 mg/m ³ , 100 ppm Long-term value: 208 mg/m ³ , 50 ppm
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- Additional information:** The lists valid during the making were used as basis.

- Personal protective equipment:**

- General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

- Respiratory protection:**

Use suitable respiratory protective device in case of insufficient ventilation.
Self-contained respiratory protective device.
Filter AX

- Protection of hands:**



Protective gloves

- Material of gloves**

Butyl rubber, BR
Nitrile rubber, NBR

- Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection:**



Tightly sealed goggles

- Body protection:** Protective work clothing

9 Physical and chemical properties

- General Information**

Form:	Fluid
Colour:	Yellowish
Odour:	Unpleasant Ester-like

- Change in condition**

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 100°C

- Flash point:** 10°C

- Ignition temperature:** 430°C

- Self-igniting:** Product is not selfigniting.

- Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

- Explosion limits:**

Lower: 2.1 Vol %

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Upper:	12.5 Vol %
· Vapour pressure at 20°C:	38.7 hPa
· Density at 20°C:	0.97 g/cm ³
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Viscosity: Dynamic at 20°C:	13 mPas

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
Keep away from heat and direct sunlight.
Exothermic polymerization.
- **Materials to be avoided:** Reacts with peroxides and other radical forming substances.
- **Dangerous reactions:** Exothermic polymerization.
- **Dangerous decomposition products:**
Carbon monoxide and carbon dioxide
Hydrocarbons
- **Additional information:** Do not allow to enter sewers/ surface or ground water.

11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

80-62-6 methyl methacrylate

Oral	LD50	> 5000 mg/kg (rat)
Dermal	LD50	> 5000 mg/kg (kan)
Inhalative	LC50 (4h)	29.8 mg/l (rat)

99-97-8 N,N-dimethyl-p-toluidine

Oral	LC50	1650 mg/l (rat)
Dermal	LD50	>2000 mg/kg (rat)
Inhalative	LC50 (4h)	1.5 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
- **Sensitisation** May cause sensitisation by skin contact.

12 Ecological information

- **Ecotoxicological effects:**

- **Acquatic toxicity:**

80-62-6 methyl methacrylate

EC0	100 mg/l (Pseudomonas putida)
EC3 (8d)	37 mg/l (Scenedesmus subspicatus od. quadricauda)

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EC50 (48h)	69 mg/l (Daphnia magna)
EC50 (96h)	170 mg/l (Selenastrum capricornutum)
LC50 (96h)	> 79 mg/l (fish)
NOEC	37 mg/l (Daphnia magna)
99-97-8 N,N-dimethyl-p-toluidine	
LC0 (96h)	100 mg/l (fish)

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

· **Product:**

· **Recommendation**

Must be specially treated adhering to official regulations.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **European waste catalogue**

07 02 08	other still bottoms and reaction residues
15 01 04	metallic packaging

· **Uncleaned packaging:**

· **Recommendation:**

Packaging may be reused or recycled after cleaning.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.
Disposal must be made according to official regulations.

· **Recommended cleansing agents:** Acetone, ethylacetate

14 Transport information

· **Land transport ADR/RID (cross-border)**



· **ADR/RID class:** 3 Flammable liquids.

· **Danger code (Kemler):** 339

· **UN-Number:** 1247

· **Packaging group:** II

· **Hazard label** 3

· **Description of goods:** 1247 METHYL METHACRYLATE MONOMER, STABILIZED

· **Maritime transport IMDG:**



· **IMDG Class:** 3

· **UN Number:** 1247

· **Label** 3

· **Packaging group:** II

· **EMS Number:** F-E,S-D

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- **Marine pollutant:** No
- **Proper shipping name:** METHYL METHACRYLATE MONOMER, STABILIZED

- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 3
- **UN/ID Number:** 1247
- **Label:** 3
- **Packaging group:** II
- **Proper shipping name:** METHYL METHACRYLATE MONOMER, STABILIZED

15 Regulatory information

- **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.
- **Code letter and hazard designation of product:**
Xi Irritant
F Highly flammable
- **Hazard-determining components of labelling:**
methyl methacrylate
- **Risk phrases:**
11 Highly flammable.
37/38 Irritating to respiratory system and skin.
43 May cause sensitisation by skin contact.
- **Safety phrases:**
3/7 Keep container tightly closed in a cool place.
9 Keep container in a well-ventilated place.
16 Keep away from sources of ignition - No smoking.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- **National regulations:**
- **Technical instructions (air):**

Class	Share in %
I	≤ 2,5
NK	50-100
- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant R-phrases**
11 Highly flammable.
23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
33 Danger of cumulative effects.
37/38 Irritating to respiratory system and skin.
43 May cause sensitisation by skin contact.

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52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. (Contd. of page 6)

- **Department issuing MSDS:** Environmental Department
- **Contact:** Dipl.- Ing. (FH) Kurt K. Engel
- *** Data compared to the previous version altered.**

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