



Boden gut, alles gut!  
Expect more from your floor.

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/09/2010

Reviewed on 07/09/2010

## 1 Identification of substance

- **Product details**
- **Trade name:** SILIKAL R 16 Hardener
- **Application of the substance / the preparation:** Reaction resin
- **Manufacturer/Supplier:**  
Silikal America  
609-B Fertilla Street  
Carrolton, GA 30117  
Tel.: 770.830.1404  
Fax.: 777.830.9213  
info@silikalamerica.com
- **Information department:** Silikal America
- **Emergency information:** INFOTRAC 1-800-535-5053

## 2 Composition/Data on components

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

- **Dangerous components:**

80-62-6	methyl methacrylate	Xi,  F; R 11-37/38-43	50-100%
99-97-8	N,N-dimethyl-p-toluidine	T; R 23/24/25-33-52/53	0.5-2.5%

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

## 3 Hazards identification

- **Hazard description:**



Xi Irritant  
F Highly flammable

- **Information pertaining to particular dangers for man 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 was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 3  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 1  
Fire = 3  
Reactivity = 0

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/09/2010

Reviewed on 07/09/2010

Trade name: SILIKAL R 16 Hardener

(Contd. of page 1)

## 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 copious amounts of water and provide fresh air. Immediately call a doctor.

## 5 Fire fighting measures

- **Suitable extinguishing agents:**  
Foam  
Sand  
CO<sub>2</sub>, extinguishing 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 material, 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, sawdust).  
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 protection against explosions and fires:**  
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.

(Contd. on page 3)

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/09/2010

Reviewed on 07/09/2010

Trade name: SILIKAL R 16 Hardener

(Contd. of page 2)

- Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.  
· **Maximum storage temperature:** 25°C

## 8 Exposure controls and personal protection

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

- **Components with limit values that require monitoring at the workplace:**

### 80-62-6 methyl methacrylate

PEL	410 mg/m <sup>3</sup> , 100 ppm
REL	410 mg/m <sup>3</sup> , 100 ppm
TLV	Short-term value: 410 mg/m <sup>3</sup> , 100 ppm Long-term value: 205 mg/m <sup>3</sup> , 50 ppm
SEN	

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

WEEL	0.5 ppm
------	---------

- **Additional information:** The lists that were valid during the creation 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.

- **Breathing equipment:**

Workplace must be properly ventilated and monitored to maintain air quality below the TLV.  
Organic vapour respirators are required only when levels meet or exceed these values. A self contained breathing apparatus is required in confined spaces.  
Filter AX or Organic Vapour Cartridge.

- **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**

<b>Form:</b>	Fluid
<b>Color:</b>	Yellowish

(Contd. on page 4)

USA

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/09/2010

Reviewed on 07/09/2010

Trade name: SILIKAL R 16 Hardener

(Contd. of page 3)

<b>Odor:</b>	Unpleasant Ester-like
<b>· Change in condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	100°C (212°F)
<b>· Flash point:</b>	10°C (50°F)
<b>· Ignition temperature:</b>	430°C (806°F)
<b>· Auto igniting:</b>	Product is not selfigniting.
<b>· Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
<b>· Explosion limits:</b>	
<b>Lower:</b>	2.1 Vol %
<b>Upper:</b>	12.5 Vol %
<b>· Vapor pressure at 20°C (68°F):</b>	38.7 hPa (29 mm Hg)
<b>· Density at 20°C (68°F):</b>	0.97 g/cm <sup>3</sup>
<b>· Solubility in / Miscibility with</b>	
<b>Water:</b>	Not miscible or difficult to mix.
<b>· Viscosity:</b>	
<b>Dynamic at 20°C (68°F):</b>	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 products of decomposition:**  
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 that are 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.

(Contd. on page 5)

USA

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/09/2010

Reviewed on 07/09/2010

**Trade name: SILIKAL R 16 Hardener**

(Contd. of page 4)

**Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

## 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)
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)
-----------	-----------------

**Additional ecological information:**
**General notes:**

Water hazard class 1 (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 of together with household garbage. Do not allow product to reach sewage system.

**Uncleaned packagings:**
**Recommendation:**

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

**Recommended cleansing agent:** Acetone, ethylacetate

## 14 Transport information

**DOT regulations:**

**Hazard class:**

3

**Identification number:**

UN1247

**Packing group:**

II

**Proper shipping name (technical name):** METHYL METHACRYLATE MONOMER, STABILIZED

(Contd. on page 6)

USA

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/09/2010

Reviewed on 07/09/2010

Trade name: SILIKAL R 16 Hardener

(Contd. of page 5)

· Label 3

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



· ADR/RID class: 3 Flammable liquids  
 · Danger code (Kemler): 339  
 · UN-Number: 1247  
 · Packaging group: II  
 · 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  
 · 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 Regulations

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredient is listed.

· Section 313 (Specific toxic chemical listings):

80-62-6 | methyl methacrylate

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

(Contd. on page 7)

USA

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/09/2010

Reviewed on 07/09/2010

Trade name: SILIKAL R 16 Hardener

(Contd. of page 6)

· <b>Chemicals known to cause reproductive toxicity for males:</b>
None of the ingredients is listed.

· <b>Chemicals known to cause developmental toxicity:</b>
None of the ingredients is listed.

· <b>Cancerogenity categories</b>
-----------------------------------

· <b>EPA (Environmental Protection Agency)</b>
80-62-6   methyl methacrylate   NL

· <b>IARC (International Agency for Research on Cancer)</b>
80-62-6   methyl methacrylate   3

· <b>NTP (National Toxicology Program)</b>
None of the ingredients is listed.

· <b>TLV (Threshold Limit Value established by ACGIH)</b>
80-62-6   methyl methacrylate   A4

· <b>MAK (German Maximum Workplace Concentration)</b>
None of the ingredients is listed.

· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
None of the ingredients is listed.

· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>
None of the ingredients is listed.

· <b>AGW (German Workplace Threshold Value)</b>
80-62-6   methyl methacrylate

· <b>Product related hazard informations:</b>
The product has been classified and marked in accordance with directives on hazardous materials.

· <b>Hazard symbols:</b>
Xi Irritant
F Highly flammable

· <b>Hazard-determining components of labelling:</b>
methyl methacrylate

· <b>Risk phrases:</b>
11 Highly flammable.
37/38 Irritating to respiratory system and skin.
43 May cause sensitisation by skin contact.

· <b>Safety phrases:</b>
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.

· <b>National regulations:</b>
--------------------------------

· <b>Technical instructions (air):</b>						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="padding: 2px;">Class</th> <th style="padding: 2px;">Share in %</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">I</td> <td style="padding: 2px;">0,5-2,5</td> </tr> <tr> <td style="padding: 2px;">NK</td> <td style="padding: 2px;">50-100</td> </tr> </tbody> </table>	Class	Share in %	I	0,5-2,5	NK	50-100
Class	Share in %					
I	0,5-2,5					
NK	50-100					

· <b>Water hazard class:</b> Water hazard class 1 (Self-assessment): slightly hazardous for water.
--

USA

(Contd. on page 8)

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/09/2010

Reviewed on 07/09/2010

**Trade name: SILIKAL R 16 Hardener**

(Contd. of page 7)

**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.

- **Department issuing MSDS:** Silikal America
- **\* Data compared to the previous version altered.**

USA