


## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name: SILIKAL RE 55 Component B**
- **Article number: RE 55-B**
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:**  
Epoxy resin  
Hardening agent/ Curing agent
- **Details of the supplier of the safety data sheet**
- **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**
- **Emergency telephone number: +49 6182 / 9235-0**

## 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
C; Corrosive  
R34: Causes burns.  
.....  
Xn; Harmful  
R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.  
.....  
Xi; Sensitising  
R43: May cause sensitisation by skin contact.  
.....  
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **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.
- **Classification system:**  
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
- **Label elements**
- **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:**  
 C Corrosive
- **Hazard-determining components of labelling:**  
3-aminomethyl-3,5,5-trimethylcyclohexylamine  
2-piperazin-1-ylethylamine  
Benzyl alcohol

# Safety data sheet

## according to 1907/2006/EC, Article 31

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**· Risk phrases:**

- 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
 34 Causes burns.  
 43 May cause sensitisation by skin contact.  
 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**· Safety phrases:**

- 9 Keep container in a well-ventilated place.  
 20 When using do not eat or drink.  
 23 Do not breathe fumes/aerosol.  
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**· Other hazards**
**· Results of PBT and vPvB assessment**

- **PBT:** Not applicable.  
 · **vPvB:** Not applicable.

### 3 Composition/information on ingredients

**· Chemical characterization: Mixtures**

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

**· Dangerous components:**

CAS: 100-51-6 EINECS: 202-859-9	Benzyl alcohol ☒ Xn R20/22	50-100%
CAS: 2855-13-2 EINECS: 220-666-8	3-aminomethyl-3,5,5-trimethylcyclohexylamine ☒ C R34; ☒ Xn R21/22; ☒ Xi R43 R52/53	10-25%
CAS: 140-31-8 EINECS: 205-411-0	2-piperazin-1-ylethylamine ☒ C R34; ☒ Xn R21/22; ☒ Xi R43 R52/53	10-25%
CAS: 15520-10-2 EINECS: 239-556-6	2-methylpentane-1,5-diamine ☒ C R34; ☒ Xn R20/22	0.5-2.5%

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

### 4 First aid measures

**· Description of 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. Then consult a doctor.  
 · **After swallowing:**  
 Drink plenty of water and provide fresh air. Call for a doctor immediately.  
 Do not induce vomiting; call for medical help immediately.  
 · **Information for doctor:**  
 · **Most important symptoms and effects, both acute and delayed**  
 No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
  - Water
  - Foam
  - Fire-extinguishing powder
  - Carbon dioxide
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
  - Formation of toxic gases is possible during heating or in case of fire.
  - In case of fire, the following can be released:
    - Carbon monoxide (CO)
    - Nitrogen oxides (NOx)
- **Advice for firefighters**
- **Protective equipment:**
  - Wear self-contained respiratory protective device.
  - Wear fully protective suit.
- **Additional information**
  - Collect contaminated fire fighting water separately. It must not enter the sewage system.
  - Cool endangered receptacles with water spray.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Ensure adequate ventilation
  - Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
  - Inform respective authorities in case of seepage into water course or sewage system.
  - Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
  - Do not flush with water or aqueous cleansing agents
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**
- **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.
- **Information about storage in one common storage facility:** Not required.

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- **Further information about storage conditions:**  
Store receptacle in a well ventilated area.  
Protect from heat and direct sunlight.
- **Maximum storage temperature:** 25°C
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **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.  
Use skin protection cream for skin protection.
- **Respiratory protection:**  
Use suitable respiratory protective device only when aerosol or mist is formed.
- **Protection of hands:**



Protective gloves

- **Material of gloves**  
Butyl rubber, BR  
Nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.4$  mm
- **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.  
For the mixture mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 374 Part 3: Level 6).
- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Fluid
Colour:	Yellowish
Odour:	Characteristic

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· <b>Odour threshold:</b>	Not determined.
· <b>pH-value at 20°C:</b>	12
· <b>Change in condition</b> <b>Melting point/Melting range:</b> <b>Boiling point/Boiling range:</b>	Undetermined. 205°C
· <b>Flash point:</b>	> 101°C
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	435°C
· <b>Decomposition temperature:</b>	Not determined.
· <b>Self-igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b> <b>Lower:</b> <b>Upper:</b>	1.3 Vol % 13.0 Vol %
· <b>Vapour pressure at 20°C:</b>	0.1 hPa
· <b>Density at 20°C:</b> · <b>Relative density</b> · <b>Vapour density</b> · <b>Evaporation rate</b>	1 g/cm <sup>3</sup> Not determined. Not determined. Not determined.
· <b>Solubility in / Miscibility with water:</b>	Not miscible or difficult to mix.
· <b>Segregation coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b> <b>Dynamic at 20°C:</b> <b>Kinematic:</b> · <b>Other information</b>	300 mPas Not determined. No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Strong exothermic reaction with acids.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Reacts with alkali, amines and strong acids.
- **Hazardous decomposition products:**  
Ammonia  
Corrosive gases/vapours
- **Additional information:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.

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### 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

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

#### 100-51-6 Benzyl alcohol

Oral	LD50	1230 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rbt)

#### 2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Oral	LC50	1030 mg/l (rat)
------	------	-----------------

#### 140-31-8 2-piperazin-1-ylethylamine

Oral	LD50	2140 mg/kg (rat)
Dermal	LD50	880 mg/kg (rbt)

- **Primary irritant effect:**

- **on the skin:** Caustic effect on skin and mucous membranes.

- **on the eye:** Strong caustic 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:

Harmful

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

### 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behaviour in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Ecotoxicological effects:**

- **Remark:** Harmful to fish

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even small quantities leak into the ground.

The material is harmful to the environment.

Harmful to aquatic organisms

Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

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### 13 Disposal considerations

- **Waste treatment methods**

- **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**

08 01 11*	waste paint and varnish containing organic solvents or other dangerous substances
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.

- **Recommended cleansing agents:** Alcohol

### 14 Transport information

- **UN-Number**

- **ADR, IMDG, IATA**

UN2735

- **UN proper shipping name**

- **ADR**

2735 AMINES, LIQUID, CORROSIVE, N.O.S.  
(ISOPHORONEDIAMINE, 2-methylpentane-1,5-diamine)

- **IMDG, IATA**

AMINES, LIQUID, CORROSIVE, N.O.S.  
(ISOPHORONEDIAMINE, 2-methylpentane-1,5-diamine)

- **Transport hazard class(es)**

- **ADR**



- **Class**

8 Corrosive substances.

- **Label**

8

- **IMDG, IATA**



- **Class**

8 Corrosive substances.

- **Label**

8

- **Packing group**

- **ADR, IMDG, IATA**

III

- **Environmental hazards:**

- **Marine pollutant:**

No

- **Special precautions for user**

Warning: Corrosive substances.

- **Danger code (Kemler):**

80

- **EMS Number:**

F-A,S-B

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- |  |                 |
|--|-----------------|
| <b>· Segregation groups</b>  | Alkalis         |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| <b>· Transport/Additional information:</b>                                       |                 |
| <b>· ADR</b>   |                 |
| <b>· Tunnel restriction code</b>   | E               |

### 15 Regulatory information

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



C Corrosive

- **Hazard-determining components of labelling:**  
3-aminomethyl-3,5,5-trimethylcyclohexylamine  
2-piperazin-1-ylethylamine  
Benzyl alcohol
  - **Risk phrases:**  
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
34 Causes burns.  
43 May cause sensitisation by skin contact.  
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
  - **Safety phrases:**  
9 Keep container in a well-ventilated place.  
20 When using do not eat or drink.  
23 Do not breathe fumes/aerosol.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
  - **National regulations:**
  - **Technical instructions (air):**
- | Class | Share in % |
|-------|------------|
| II    | 25-50      |
- **Waterhazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
  - **Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

### 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.

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**· Relevant phrases**

R20/22 Harmful by inhalation and if swallowed.

R21/22 Harmful in contact with skin and if swallowed.

R34 Causes burns.

R43 May cause sensitisation by skin contact.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**· Department issuing MSDS:** Environmental Department**· \* Data compared to the previous version altered.**

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