

1: Identification

- **1.1 Product identifier**
- **Trade name: SILIKAL RE 77 Comp. B**
- **Article number:** RE 77-B
- **Application of the substance / the preparation:**
Epoxy resin
Hardening agent/ Curing agent
- **1.3 Details of the supplier of the safety data sheet**
- **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
- **1.4 Emergency telephone number:** INFOTRAC 1-800-535-5053

2: Hazard(s) identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.
Skin Sens. 1 H317 May cause an allergic skin reaction.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labeled according to the CLP regulation.
- **Hazard pictograms**



GHS05 GHS07

- **Signal word** Danger
- **Hazard-determining components of labeling:**
Benzyl alcohol
3-aminomethyl-3,5,5-trimethylcyclohexylamine
4,4'-Isopropylidendiphenol, Oligomer mit Epichlorhydrin und Isophorondiamin
Octahydro-4.7-methano-1H-inden-dimethanamin
- **Hazard statements**
H302+H312 Harmful if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
- **Precautionary statements**
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P260 Do not breathe dusts or mists.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3
 Fire = 1
 Reactivity = 0

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



Health = 4
 Fire = 1
 Reactivity = 0

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3: Composition/information on ingredients

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

- **Dangerous components:**

100-51-6	Benzyl alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	25-50%
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317	10-25%
38294-64-3	4,4'-Isopropylidendiphenol, Oligomer mit Epichlorhydrin und Isophorondiamin ⚠ Skin Corr. 1A, H314	10-25%
2549-93-1	cyclohex-1,4-ylenebis(methylamine) ⚠ Acute Tox. 3, H301	2.5-10%
68889-71-4	Octahydro-4.7-methano-1H-inden-dimethanamin ⚠ Acute Tox. 3, H311; ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	2.5-5%

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

4: First-aid measures

- **4.1 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 copious amounts of water and provide fresh air. Immediately call a doctor.
Do not induce vomiting; immediately call for medical help.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.

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

5: Fire-fighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
Water
Foam
Fire-extinguishing powder
Carbon dioxide
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 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 (NO_x)
- **5.3 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

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Wear protective equipment. Keep unprotected persons away.
- **6.2 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.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **6.4 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

- **7.1 Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.
- **7.2 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.

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- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Store receptacle in a well ventilated area.
Protect from heat and direct sunlight.
- **Maximum storage temperature:** 25 °C
- **7.3 Specific end use(s)** No further relevant information available.

8: Exposure controls/personal protection

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

8.1 Control parameters

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

100-51-6 Benzyl alcohol

WEEL | Long-term value: 10 ppm

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

8.2 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.

Breathing equipment:

- Use suitable respiratory protective device only when aerosol or mist is formed.

Recommended filter device for short term use: Filter A

Protection of hands:



Protective gloves

Material of gloves

- Nitrile rubber, NBR
- Butyl rubber, BR
- Recommended thickness of the material: ≥ 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 of chemicals 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

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form: Fluid

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· Color:	Yellow tint
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value at 20 °C (68 °F):	11
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	205 °C (401 °F)
· Flash point:	101 °C (214 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	435 °C (815 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	1.3 Vol %
Upper:	13.0 Vol %
· Vapor pressure at 20 °C (68 °F):	0.1 hPa
· Density at 20 °C (68 °F):	1.02 g/cm ³ (8.512 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C (68 °F):	250 mPas
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	45.0 %
Solids content:	55.0 %
· 9.2 Other information	No further relevant information available.

10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Strong exothermic reaction with acids.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** Reacts with alkali, amines and strong acids.
- **10.6 Hazardous decomposition products:**
Ammonia
Corrosive gases/vapors
- **Additional information:**
Inform respective authorities in case of seepage into water course or sewage system.

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Do not allow to enter sewers/ surface or ground water.

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11: Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity:**

Harmful if swallowed or in contact with skin.

- **LD/LC50 values that are 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)
------	------	-----------------

68889-71-4 Octahydro-4.7-methano-1H-inden-dimethanamin

Oral	LD50	502 mg/kg (rat)
Dermal	LD50	400-500 mg/kg (rat)

- **Primary irritant effect:**

- **on the skin:**

Causes severe skin burns and eye damage.

- **on the eye:**

Causes serious eye damage.

- **Sensitization:**

May cause an allergic skin reaction.

- **Additional toxicological information:**

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12: Ecological information

- **12.1 Toxicity**

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

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

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

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

- **Ecotoxicological effects:**

- **Remark:** Harmful to fish

- **Additional ecological information:**

- **General notes:**

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

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

Must not reach bodies of 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

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

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

13: Disposal considerations

- **13.1 Waste treatment methods**
- **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.
- **Recommended cleansing agent:**
Alcohol
Acetone

14: Transport information

- | | |
|---|--|
| 14.1 UN-Number | UN2735 |
| DOT, ADR, IMDG, IATA | |
| 14.2 UN proper shipping name | Amines, liquid, corrosive, n.o.s. |
| DOT, IATA | (Isophoronediamine) |
| ADR | 2735 Amines, liquid, corrosive, n.o.s. |
| | (Isophoronediamine) |
| IMDG | AMINES, LIQUID, CORROSIVE, N.O.S. |
| | (ISOPHORONEDIAMINE) |
| 14.3 Transport hazard class(es) | |
| DOT | |
|  | |
| Class | 8 Corrosive substances |
| Label | 8 |
| <hr style="border-top: 1px dashed black;"/> | |
| ADR, IMDG, IATA | |
|  | |
| Class | 8 Corrosive substances |
| Label | 8 |
| 14.4 Packing group | |
| DOT, ADR, IMDG, IATA | III |
| 14.5 Environmental hazards: | |
| Marine pollutant: | No |
| 14.6 Special precautions for user | |
| Danger code (Kemler): | Warning: Corrosive substances |
| EMS Number: | 80 |
| | F-A,S-B |

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· Segregation groups	Alkalis
· Stowage Category	A
· Segregation Code	SG35 Stow "separated from" acids.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONEDIAMINE), 8, III

15: Regulatory information

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

· Section 355 (extremely hazardous substances):

None of the ingredient is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· 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.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Cancerogenity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **AGW (German Workplace Threshold Value)**

None of the ingredients is listed.

· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
II	25-50

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not 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.

· **Department issuing SDS:** Silikal America

· **Date of preparation / last revision** 04/27/2016 / 17

· **Abbreviations and acronyms:**

Acute Tox. 3: Acute toxicity, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

· * **Data compared to the previous version altered.**

US