



## Safety Data Sheet according to (EC) No 1907/2006 as amended

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LOCTITE EA 9464 DC50ML EN

SDS No. : 178431  
V004.0

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

#### 1.1. Product identifier

LOCTITE EA 9464 DC50ML EN

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use:  
2-c-epoxide adhesive

#### 1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA  
Henkelstr. 67  
40589 Düsseldorf

Germany

Phone: +49 211 797 0

[ua-productsafety.de@henkel.com](mailto:ua-productsafety.de@henkel.com)

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or [www.henkel-adhesives.com](http://www.henkel-adhesives.com).

#### 1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (CLP):

Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Chronic hazards to the aquatic environment	Category 2
H411 Toxic to aquatic life with long lasting effects.	

#### 2.2. Label elements

##### Label elements (CLP):

**Hazard pictogram:****Contains**

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight  $\leq 700$ )

Bisphenol-F epichlorhydrin resin; MW < 700  
1,4-Bis(glycidoxymethyl)cyclohexane

**Signal word:**

Warning

**Hazard statement:**

H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H411 Toxic to aquatic life with long lasting effects.

**Precautionary statement:  
Prevention**

P273 Avoid release to the environment.  
P280 Wear protective gloves.

**Precautionary statement:  
Response**

P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.

**2.3. Other hazards**

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

**Following substances are present in a concentration  $\geq 0,1\%$  and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):**

This mixture does not contain any substances in concentration  $\geq$  the concentration limit that are assessed to be a PBT, vPvB or ED.

<b>SECTION 3: Composition/information on ingredients</b>
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**3.2. Mixtures**

**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	25- 50 %	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411 Eye Irrit. 2, H319	Eye Irrit. 2; H319; C $\geq$ 5 % Skin Irrit. 2; H315; C $\geq$ 5 %	
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5 01-2119454392-40	25- 50 %	Skin Irrit. 2, Dermal, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411		
Barite (Ba(SO <sub>4</sub> )) 13462-86-7 236-664-5	5- < 10 %			EU OEL
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0 238-098-4	5- < 10 %	Skin Irrit. 2, H315 Skin Sens. 1, H317 Acute Tox. 4, Oral, H302 Aquatic Chronic 3, H412		
Titanium dioxide 13463-67-7 236-675-5 01-2119489379-17	0,1- < 1 %	Carc. 2, Inhalation, H351		

For full text of the H - statements and other abbreviations see section 16 "Other information".  
Substances without classification may have community workplace exposure limits available.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

Move to fresh air. If symptoms persist, seek medical advice.

#### Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

#### Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

#### Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

### 4.2. Most important symptoms and effects, both acute and delayed

SKIN: Redness, inflammation.

SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

### 4.3. Indication of any immediate medical attention and special treatment needed

See section: Description of first aid measures

## SECTION 5: Firefighting measures

**5.1. Extinguishing media****Suitable extinguishing media:**

Carbon dioxide, foam, powder

**Extinguishing media which must not be used for safety reasons:**

None known

**5.2. Special hazards arising from the substance or mixture**

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) can be released.

**5.3. Advice for firefighters**

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

**Additional information:**

In case of fire, keep containers cool with water spray.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Avoid skin and eye contact.

Ensure adequate ventilation.

Wear protective equipment.

**6.2. Environmental precautions**

Do not empty into drains / surface water / ground water.

**6.3. Methods and material for containment and cleaning up**

For small spills wipe up with paper towel and place in container for disposal.

For large spills absorb onto inert absorbent material and place in sealed container for disposal.

Wash spillage site thoroughly with soap and water or detergent solution.

Dispose of contaminated material as waste according to Section 13.

**6.4. Reference to other sections**

See advice in section 8

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

Use only in well-ventilated areas.

Avoid skin and eye contact.

Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.

See advice in section 8

**Hygiene measures:**

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

Good industrial hygiene practices should be observed.

**7.2. Conditions for safe storage, including any incompatibilities**

Store in a cool, well-ventilated place.

**7.3. Specific end use(s)**

2-c-epoxide adhesive

<b>SECTION 8: Exposure controls/personal protection</b>
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**8.1. Control parameters****Occupational Exposure Limits**

Valid for  
Germany

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
Barite (Ba(SO <sub>4</sub> )) 13462-86-7 [BARIUM (SOLUBLE COMPOUNDS AS BA)]		0,5	Time Weighted Average (TWA):	Indicative	ECLTV
Barite (Ba(SO <sub>4</sub> )) 13462-86-7			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
Barite (Ba(SO <sub>4</sub> )) 13462-86-7		0,5	Exposure limit(s):	1	TRGS 900
Titanium dioxide 13463-67-7			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Titanium dioxide 13463-67-7		10	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Titanium dioxide 13463-67-7		1,25	Exposure limit(s):	If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900

**Predicted No-Effect Concentration (PNEC):**

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	aqua (freshwater)		0,003 mg/l				
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	aqua (marine water)		0,0003 mg/l				
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	sewage treatment plant (STP)		10 mg/l				
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	sediment (freshwater)				0,294 mg/kg		
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	sediment (marine water)				0,0294 mg/kg		
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	Soil				0,237 mg/kg		
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	aqua (intermittent releases)		0,0254 mg/l				
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	Air						no hazard identified
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq 700$ ) (old) 9003-36-5	Predator						no potential for bioaccumulation

**Derived No-Effect Level (DNEL):**

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) (old) 9003-36-5	Workers	Inhalation	Long term exposure - systemic effects		29,39 mg/m <sup>3</sup>	no hazard identified
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) (old) 9003-36-5	Workers	dermal	Long term exposure - systemic effects		104,15 mg/kg	no hazard identified
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) (old) 9003-36-5	Workers	dermal	Acute/short term exposure - local effects		0,0083 mg/cm <sup>2</sup>	no hazard identified
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) (old) 9003-36-5	General population	Inhalation	Long term exposure - systemic effects		8,7 mg/m <sup>3</sup>	no hazard identified
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) (old) 9003-36-5	General population	dermal	Long term exposure - systemic effects		62,5 mg/kg	no hazard identified
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) (old) 9003-36-5	General population	oral	Long term exposure - systemic effects		6,25 mg/kg	no hazard identified
Titanium dioxide 13463-67-7	Workers	inhalation	Long term exposure - local effects		10 mg/m <sup>3</sup>	
Titanium dioxide 13463-67-7	General population	oral	Long term exposure - systemic effects		700 mg/kg	

**Biological Exposure Indices:**

None

**8.2. Exposure controls:**

## Engineering controls:

Ensure good ventilation/extraction.

## Respiratory protection:

Ensure adequate ventilation.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

Filter type: A (EN 14387)

## Hand protection:

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to &gt; 30 minutes permeation time as per EN 374):

nitrile rubber (NBR;  $\geq$  0.4 mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to &gt; 480 minutes permeation time as per EN 374):

nitrile rubber (NBR;  $\geq$  0.4 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

## Eye protection:

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Protective eye equipment should conform to EN166.

**Skin protection:**

Wear suitable protective clothing.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

**Advices to personal protection equipment:**

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

**SECTION 9: Physical and chemical properties**
**9.1. Information on basic physical and chemical properties**

Physical state	liquid
Delivery form	paste
Colour	white
Odor	odourless
Melting point	Not applicable
Initial boiling point	> 148 °C (> 298.4 °F)
Flammability	Not applicable
Explosive limits	Currently under determination
Flash point	> 148 °C (> 298.4 °F)
Auto-ignition temperature	Currently under determination
Decomposition temperature	Currently under determination
pH	Not available., Product is non-soluble (in water).
Viscosity (kinematic)	Currently under determination
Solubility (qualitative) (Solvent: Water)	Insoluble
Partition coefficient: n-octanol/water	Currently under determination
Vapour pressure (50 °C (122 °F))	< 700 mbar;no method
Density ( )	1,4 g/cm <sup>3</sup> None
Relative vapour density:	Currently under determination
Particle characteristics	Currently under determination

**9.2. Other information**

Other information not applicable for this product

**SECTION 10: Stability and reactivity**
**10.1. Reactivity**

Reaction with strong acids.

Reacts with strong oxidants.

Reaction with some curing agents may produce an exothermic reaction which in large masses could cause runaway polymerization.

**10.2. Chemical stability**

Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

See section reactivity

**10.4. Conditions to avoid**

No decomposition if used according to specifications.



**10.5. Incompatible materials**

See section reactivity.

**10.6. Hazardous decomposition products**

carbon oxides.

**SECTION 11: Toxicological information****1.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute oral toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	LD50	> 2.000 mg/kg	rat	OECD Guideline 420 (Acute Oral Toxicity)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	LD50	> 5.000 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Barite (Ba(SO4)) 13462-86-7	LD50	30.700 - 36.400 mg/kg	rat	not specified
Barite (Ba(SO4)) 13462-86-7	LD50	> 15.000 mg/kg	rat	not specified
1,4- Bis(glycidoxymethyl)cycl ohexane 14228-73-0	LD50	1.098 mg/kg	rat	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)
Titanium dioxide 13463-67-7	LD50	> 5.000 mg/kg	rat	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)

**Acute dermal toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	LD50	> 2.000 mg/kg	rat	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
1,4- Bis(glycidoxymethyl)cycl ohexane 14228-73-0	LD50	> 2.000 mg/kg	rabbit	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
Titanium dioxide 13463-67-7	LD50	> 10.000 mg/kg	rabbit	not specified

**Acute inhalative toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	LC50	> 5,19 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Titanium dioxide 13463-67-7	LC50	> 6,82 mg/l	dust	4 h	rat	not specified

**Skin corrosion/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	not irritating	4 h	rabbit	not specified
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	irritating	4 h	rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Titanium dioxide 13463-67-7	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

**Serious eye damage/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	not irritating		rabbit	equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion)
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	not irritating	10 min	Bovine, cornea, in vitro test	OECD Guideline 437 (BCOP)
Titanium dioxide 13463-67-7	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

**Respiratory or skin sensitization:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Titanium dioxide 13463-67-7	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Titanium dioxide 13463-67-7	not sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

**Germ cell mutagenicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	positive	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Titanium dioxide 13463-67-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Titanium dioxide 13463-67-7	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Titanium dioxide 13463-67-7	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Titanium dioxide 13463-67-7	negative	in vitro mammalian cell micronucleus test	without		equivalent or similar to OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	negative	oral: gavage		mouse	not specified
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	negative	oral: gavage		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	negative	oral: gavage		rat	OECD Guideline 486 (Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo)
Titanium dioxide 13463-67-7	negative	oral: gavage		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

**Carcinogenicity**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	not carcinogenic	dermal	2 y daily	mouse	male	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	not carcinogenic	oral: gavage	2 y daily	rat	male/female	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
Titanium dioxide 13463-67-7	not carcinogenic	oral: feed	103 w daily	rat	male/female	not specified

**Reproductive toxicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	NOAEL P $\geq$ 50 mg/kg NOAEL F1 $\geq$ 750 mg/kg NOAEL F2 $\geq$ 750 mg/kg	Two generation study	oral: gavage	rat	OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)
Bisphenol-F epichlorhydrin resin; MW $<$ 700 9003-36-5	NOAEL P $>$ 750 mg/kg NOAEL F1 750 mg/kg NOAEL F2 750 mg/kg	two-generation study	oral: gavage	rat	OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)
Titanium dioxide 13463-67-7	NOAEL P $\geq$ 1.000 mg/kg NOAEL F1 $\geq$ 1.000 mg/kg	one-generation study	oral: feed	rat	OECD Guideline 443 (Extended One-Generation Reproductive Toxicity Study)

**STOT-single exposure:**

No data available.

**STOT-repeated exposure::**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	NOAEL 50 mg/kg	oral: gavage	14 w daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Bisphenol-F epichlorhydrin resin; MW $<$ 700 9003-36-5	NOAEL 250 mg/kg	oral: gavage	13 w daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Titanium dioxide 13463-67-7	NOAEL $>$ 1.000 mg/kg	oral: gavage	92 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

**Aspiration hazard:**

No data available.

**11.2 Information on other hazards**

not applicable

## SECTION 12: Ecological information

### General ecological information:

Do not empty into drains / surface water / ground water.

### 12.1. Toxicity

#### Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	LC50	1,75 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	LC50	5,7 mg/l	96 h	Leuciscus idus	OECD Guideline 203 (Fish, Acute Toxicity Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	LC50	Toxicity > Water solubility	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	NOEC	Toxicity > Water solubility	33 d	Danio rerio	OECD Guideline 210 (fish early lite stage toxicity test)
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	LC50	10,1 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Titanium dioxide 13463-67-7	LC50	Toxicity > Water solubility	48 h	Leuciscus idus	OECD Guideline 203 (Fish, Acute Toxicity Test)

#### Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	EC50	1,7 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	EC50	2,55 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	EC50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	EC50	16,3 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Titanium dioxide 13463-67-7	EC50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

#### Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	NOEC	0,3 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	NOEC	0,3 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	NOEC	Toxicity > Water solubility	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	NOEC	> 11,7 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Titanium dioxide 13463-67-7	NOEC	Toxicity > Water solubility	21 d	Daphnia magna	OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test)

### Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	EC50	> 11 mg/l	72 h	Scenedesmus capricornutum	OECD Guideline 201 (Alga, Growth Inhibition Test)
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	NOEC	4,2 mg/l	72 h	Scenedesmus capricornutum	OECD Guideline 201 (Alga, Growth Inhibition Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	EC50	1,8 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	EC50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	NOEC	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	EC50	26,7 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	EC10	21,4 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Titanium dioxide 13463-67-7	EC50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Titanium dioxide 13463-67-7	NOEC	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)

### Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700) 25068-38-6	IC50	> 100 mg/l	3 h	activated sludge, industrial	other guideline:
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	IC50	> 100 mg/l	3 h	activated sludge, industrial	other guideline:
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	EC0	> 10.000 mg/l	30 min		not specified
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	EC10	1.181 mg/l	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
Titanium dioxide 13463-67-7	EC0	Toxicity > Water solubility	24 h	Pseudomonas fluorescens	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)

**12.2. Persistence and degradability**

The product is not biodegradable.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	not readily biodegradable.	aerobic	5 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	not readily biodegradable.	aerobic	0 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	not readily biodegradable.	aerobic	16,6 %	34 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

**12.3. Bioaccumulative potential**

No data available.

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	74,4			Lepomis macrochirus	other guideline:

**12.4. Mobility in soil**

Cured adhesives are immobile.

Hazardous substances CAS-No.	LogPow	Temperature	Method
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700) 25068-38-6	3,242	25 °C	EU Method A.8 (Partition Coefficient)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	2,7 - 3,6		OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
1,4-Bis(glycidoxymethyl)cyclohexane 14228-73-0	2,29	30 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

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

Hazardous substances CAS-No.	PBT / vPvB
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.
Titanium dioxide 13463-67-7	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.

**12.6. Endocrine disrupting properties**

not applicable

**12.7. Other adverse effects**

No data available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**



**Product disposal:**

Dispose of in accordance with local and national regulations.

**Disposal of uncleaned packages:**

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Disposal must be made according to official regulations.

**Waste code**

08 04 09\* waste adhesives and sealants containing organic solvents and other dangerous substances

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

**SECTION 14: Transport information****14.1. UN number**

ADR	3082
RID	3082
ADN	3082
IMDG	3082
IATA	3082

**14.2. UN proper shipping name**

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)
IATA	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol-F Epichlorhydrin resin,Bisphenol-A Epichlorhydrin resin)

**14.3. Transport hazard class(es)**

ADR	9
RID	9
ADN	9
IMDG	9
IATA	9

**14.4. Packing group**

ADR	III
RID	III
ADN	III
IMDG	III
IATA	III

**14.5. Environmental hazards**

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	Marine pollutant
IATA	not applicable

**14.6. Special precautions for user**

ADR	not applicable
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	Tunnelcode:
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), A197 (IATA), 2.10.2.7 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

#### 14.7. Maritime transport in bulk according to IMO instruments

not applicable

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EC)	< 3 %

#### 15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

#### National regulations/information (Germany):

WGK: WGK 2: significantly water endangering (Ordinance on facilities for handling substances that are hazardous to water (AwSV) )  
Classification according to AwSV, Annex 1 (5.2)

Storage class according to TRGS 510: 10

**SECTION 16: Other information**

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.  
H411 Toxic to aquatic life with long lasting effects.  
H412 Harmful to aquatic life with long lasting effects.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2:	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

**Further information:**

This Safety Data Sheet has been produced for sales from Henkel to parties purchasing from Henkel, is based on Regulation (EC) No 1907/2006 and provides information in accordance with applicable regulations of the European Union only. In that respect, no statement, warranty or representation of any kind is given as to compliance with any statutory laws or regulations of any other jurisdiction or territory other than the European Union. When exporting to territories other than the European Union, please consult with the respective Safety Data Sheet of the concerned territory to ensure compliance or liaise with Henkel's Product Safety and Regulatory Affairs Department ([ua-productsafety.de@henkel.com](mailto:ua-productsafety.de@henkel.com)) prior to export to other territories than the European Union.

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Dear Customer,

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**Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.**



## Safety Data Sheet according to (EC) No 1907/2006 as amended Page 1 of 20

LOCTITE EA 9464 DC50ML EN

SDS No. : 653664  
V004.0

Revision: 29.06.2022  
printing date: 23.12.2022

Replaces version from: 07.01.2022

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

#### 1.1. Product identifier

LOCTITE EA 9464 DC50ML EN

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use:  
Epoxy adhesive

#### 1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA  
Henkelstr. 67  
40589 Düsseldorf

Germany

Phone: +49 211 797 0

ua-productsafety.de@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or [www.henkel-adhesives.com](http://www.henkel-adhesives.com).

#### 1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (CLP):

Skin corrosion	Sub-category 1B
H314 Causes severe skin burns and eye damage.	
Serious eye damage	Category 1
H318 Causes serious eye damage.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Toxic to reproduction	Category 2
H361 Suspected of damaging fertility or the unborn child.	

#### 2.2. Label elements

##### Label elements (CLP):

##### Hazard pictogram:



Contains

Butadiene-acrylonitrile

formaldehyde, polymeric reaction products with 4- tertbutylphenol, mphenylenebis(methylamine) and trimethylhexane- 1,6-diamine

Bis(aminopropyl)piperazine  
Isophorone diamine  
2-piperazin-1-ylethylamine

m-Phenylenebis(methylamine)

<b>Signal word:</b>	Danger
<b>Hazard statement:</b>	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H361 Suspected of damaging fertility or the unborn child.
<b>Precautionary statement: Prevention</b>	P280 Wear protective gloves/protective clothing/eye protection/face protection.
<b>Precautionary statement: Response</b>	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor. P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

### 2.3. Other hazards

None if used properly.  
Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

**Following substances are present in a concentration  $\geq 0,1\%$  and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):**

This mixture does not contain any substances in concentration  $\geq$  the concentration limit that are assessed to be a PBT, vPvB or ED.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Butadiene-acrylonitrile 68683-29-4	20- 40 %	Skin Irrit. 2, H315 Skin Sens. 1, H317		
Barite (Ba(SO4)) 13462-86-7 236-664-5	10- 20 %			EU OEL
formaldehyde, polymeric reaction products with 4- tertbutylphenol, mphenylenebis(methylamine) and trimethylhexane- 1,6- diamine	5- < 10 %	Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Chronic 3, H412		
benzyl alcohol 100-51-6 202-859-9 01-2119492630-38	5- < 10 %	Acute Tox. 4, Oral, H302 Acute Tox. 4, Inhalation, H332 Eye Irrit. 2, H319	dermal:ATE = 2.500 mg/kg inhalation:ATE = 4,17 mg/l;dust/mist	
Bis(aminopropyl)piperazine 7209-38-3 230-589-1 01-2120747740-54	5- < 10 %	Acute Tox. 4, Oral, H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412		
Isophorone diamine 2855-13-2 220-666-8 01-2119514687-32	1- < 5 %	Skin Sens. 1A, H317 Eye Dam. 1, H318 Skin Corr. 1B, H314 Acute Tox. 4, Oral, H302	Skin Sens. 1A; H317; C >= 0,001 % ===== oral:ATE = 1.030 mg/kg inhalation:ATE = 5,011 mg/l;	
2-piperazin-1-ylethylamine 140-31-8 205-411-0 01-2119471486-30	1- < 5 %	Acute Tox. 3, Dermal, H311 Acute Tox. 4, Oral, H302 Skin Corr. 1B, H314 Aquatic Chronic 3, H412 Skin Sens. 1, H317 Repr. 2, H361	inhalation:ATE = > 10 mg/l;dust/mist	
m-Phenylenebis(methylamine) 1477-55-0 216-032-5 01-2119480150-50	1- < 3 %	Acute Tox. 4, Oral, H302 Skin Corr. 1B, H314 Skin Sens. 1B, H317 Acute Tox. 4, Inhalation, H332 Aquatic Chronic 3, H412 Eye Dam. 1, H318		

**For full text of the H - statements and other abbreviations see section 16 "Other information".  
Substances without classification may have community workplace exposure limits available.**

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

Move to fresh air. If symptoms persist, seek medical advice.

#### Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

#### Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

**Ingestion:**

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

**4.2. Most important symptoms and effects, both acute and delayed**

SKIN: Rash, Urticaria.

Causes burns.

**4.3. Indication of any immediate medical attention and special treatment needed**

See section: Description of first aid measures

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media:**

water, carbon dioxide, foam, powder

**Extinguishing media which must not be used for safety reasons:**

High pressure waterjet

**5.2. Special hazards arising from the substance or mixture**

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) can be released.

**5.3. Advice for firefighters**

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

**Additional information:**

In case of fire, keep containers cool with water spray.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Avoid contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

Keep away from sources of ignition.

**6.2. Environmental precautions**

Do not empty into drains / surface water / ground water.

**6.3. Methods and material for containment and cleaning up**

Dispose of contaminated material as waste according to Section 13.

For small spills wipe up with paper towel and place in container for disposal.

For large spills absorb onto inert absorbent material and place in sealed container for disposal.

**6.4. Reference to other sections**

See advice in section 8

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

Avoid skin and eye contact.

See advice in section 8

**Hygiene measures:**

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

Good industrial hygiene practices should be observed.

**7.2. Conditions for safe storage, including any incompatibilities**

Store in sealed original container.

Protect against contamination.

Store in a cool, well-ventilated place.

Refer to Technical Data Sheet

**7.3. Specific end use(s)**

Epoxy adhesive



## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational Exposure Limits

Valid for  
Germany

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
Barite (Ba(SO <sub>4</sub> )) 13462-86-7 [BARIUM (SOLUBLE COMPOUNDS AS BA)]		0,5	Time Weighted Average (TWA):	Indicative	ECLTV
Barite (Ba(SO <sub>4</sub> )) 13462-86-7			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
Barite (Ba(SO <sub>4</sub> )) 13462-86-7		0,5	Exposure limit(s):	1	TRGS 900
Benzyl alcohol 100-51-6			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
Benzyl alcohol 100-51-6	5	22	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Benzyl alcohol 100-51-6			Skin designation:	Can be absorbed through the skin.	TRGS 900
2,2',2''-Nitrilotriethanol 102-71-6			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
2,2',2''-Nitrilotriethanol 102-71-6		1	Exposure limit(s):	1 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Silicon dioxide 112945-52-5		4	Exposure limit(s):	If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Silicon dioxide 112945-52-5			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Silicon dioxide 112945-52-5		10	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Silicon dioxide 112945-52-5		1,25	Exposure limit(s):	If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900

**Predicted No-Effect Concentration (PNEC):**

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Benzyl alcohol 100-51-6	Soil				0,456 mg/kg		
Benzyl alcohol 100-51-6	sewage treatment plant (STP)		39 mg/l				
Benzyl alcohol 100-51-6	sediment (freshwater)				5,27 mg/kg		
Benzyl alcohol 100-51-6	sediment (marine water)				0,527 mg/kg		
Benzyl alcohol 100-51-6	aqua (marine water)		0,1 mg/l				
Benzyl alcohol 100-51-6	aqua (intermittent releases)		2,3 mg/l				
Benzyl alcohol 100-51-6	aqua (freshwater)		1 mg/l				
Benzyl alcohol 100-51-6	Air						no hazard identified
Benzyl alcohol 100-51-6	Predator						no potential for bioaccumulation
3-Aminomethyl-3,5,5- trimethylcyclohexylamine 2855-13-2	aqua (freshwater)		0,06 mg/l				
3-Aminomethyl-3,5,5- trimethylcyclohexylamine 2855-13-2	aqua (marine water)		0,006 mg/l				
3-Aminomethyl-3,5,5- trimethylcyclohexylamine 2855-13-2	aqua (intermittent releases)		0,23 mg/l				
3-Aminomethyl-3,5,5- trimethylcyclohexylamine 2855-13-2	sediment (freshwater)				5,784 mg/kg		
3-Aminomethyl-3,5,5- trimethylcyclohexylamine 2855-13-2	sediment (marine water)				0,578 mg/kg		
3-Aminomethyl-3,5,5- trimethylcyclohexylamine 2855-13-2	Soil				1,121 mg/kg		
3-Aminomethyl-3,5,5- trimethylcyclohexylamine 2855-13-2	sewage treatment plant (STP)		3,18 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	aqua (freshwater)		0,058 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	aqua (marine water)		0,006 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	sediment (freshwater)				215 mg/kg		
2-Piperazin-1-ylethylamine 140-31-8	sediment (marine water)				21,5 mg/kg		
2-Piperazin-1-ylethylamine 140-31-8	sewage treatment plant (STP)		250 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	Freshwater - intermittent		0,58 mg/l				
2-Piperazin-1-ylethylamine 140-31-8	Soil				1 mg/kg		
m-Phenylenebis(methylamine) 1477-55-0	aqua (freshwater)		0,094 mg/l				
m-Phenylenebis(methylamine) 1477-55-0	aqua (marine water)		0,009 mg/l				
m-Phenylenebis(methylamine) 1477-55-0	aqua (intermittent releases)		0,152 mg/l				
m-Phenylenebis(methylamine) 1477-55-0	sewage treatment plant (STP)		10 mg/l				
m-Phenylenebis(methylamine) 1477-55-0	sediment (freshwater)				12,4 mg/kg		

m-Phenylenebis(methylamine) 1477-55-0	sediment (marine water)				1,24 mg/kg	
m-Phenylenebis(methylamine) 1477-55-0	Soil				2,44 mg/kg	

**Derived No-Effect Level (DNEL):**

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Benzyl alcohol 100-51-6	General population	oral	Acute/short term exposure - systemic effects		20 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	oral	Long term exposure - systemic effects		4 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	Workers	inhalation	Acute/short term exposure - systemic effects		110 mg/m3	no hazard identified
Benzyl alcohol 100-51-6	Workers	inhalation	Long term exposure - systemic effects		22 mg/m3	no hazard identified
Benzyl alcohol 100-51-6	General population	inhalation	Acute/short term exposure - systemic effects		27 mg/m3	no hazard identified
Benzyl alcohol 100-51-6	General population	inhalation	Long term exposure - systemic effects		5,4 mg/m3	no hazard identified
Benzyl alcohol 100-51-6	Workers	dermal	Acute/short term exposure - systemic effects		40 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	Workers	dermal	Long term exposure - systemic effects		8 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	dermal	Acute/short term exposure - systemic effects		20 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	dermal	Long term exposure - systemic effects		4 mg/kg	no hazard identified
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	Workers	inhalation	Long term exposure - local effects		0,073 mg/m3	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	Workers	inhalation	Acute/short term exposure - local effects		0,073 mg/m3	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	General population	oral	Long term exposure - systemic effects		0,526 mg/kg	
2-Piperazin-1-ylethylamine 140-31-8	Workers	inhalation	Acute/short term exposure - local effects		80 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	Workers	inhalation	Long term exposure - local effects		0,015 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	Workers	Inhalation	Acute/short term exposure - systemic effects		10,6 mg/m3	
2-Piperazin-1-ylethylamine 140-31-8	Workers	dermal	Long term exposure - systemic effects		3,33 mg/kg	
2-Piperazin-1-ylethylamine 140-31-8	Workers	Inhalation	Long term exposure - systemic effects		10,6 mg/m3	
m-Phenylenebis(methylamine) 1477-55-0	Workers	dermal	Long term exposure - systemic effects		0,33 mg/kg	
m-Phenylenebis(methylamine) 1477-55-0	Workers	inhalation	Long term exposure - systemic effects		1,2 mg/m3	
m-Phenylenebis(methylamine) 1477-55-0	Workers	inhalation	Long term exposure - local effects		0,2 mg/m3	

**Biological Exposure Indices:**

None

**8.2. Exposure controls:**

Engineering controls:  
Ensure good ventilation/extraction.

Respiratory protection:  
Ensure adequate ventilation.  
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area  
Filter type: A (EN 14387)

Hand protection:  
Chemical-resistant protective gloves (EN 374).  
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):  
nitrile rubber (NBR;  $\geq$  0.4 mm thickness)  
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):  
nitrile rubber (NBR;  $\geq$  0.4 mm thickness)  
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:  
Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.  
Protective eye equipment should conform to EN166.

Skin protection:  
Wear suitable protective clothing.  
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state	liquid
Delivery form	liquid
Colour	black
Odor	typical
Melting point	Not applicable, Product is a liquid
Initial boiling point	> 150 °C (> 302 °F)
Flammability	Currently under determination
Explosive limits	Currently under determination
Flash point	> 80,00 °C (> 176 °F)
Auto-ignition temperature	Currently under determination
Decomposition temperature	Currently under determination
pH	Not applicable
pH	Product is non-soluble (in water).
Viscosity (kinematic)	Currently under determination
Solubility (qualitative)	Currently under determination
Partition coefficient: n-octanol/water	Not applicable

Vapour pressure	Mixture
Density	Currently under determination
( )	1,36 g/cm <sup>3</sup> None
Relative vapour density:	Currently under determination
Particle characteristics	Currently under determination

## 9.2. Other information

Other information not applicable for this product

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reacts with strong oxidants.  
Reaction with strong acids.

### 10.2. Chemical stability

Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

See section reactivity

### 10.4. Conditions to avoid

Stable under normal conditions of storage and use.

### 10.5. Incompatible materials

See section reactivity.

### 10.6. Hazardous decomposition products

carbon oxides.

## SECTION 11: Toxicological information

### 1.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Butadiene-acrylonitrile 68683-29-4	LD50	> 15.380 mg/kg	rat	not specified
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	LD50	30.700 - 36.400 mg/kg	rat	not specified
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	LD50	> 15.000 mg/kg	rat	not specified
benzyl alcohol 100-51-6	LD50	1.620 mg/kg	rat	not specified
Bis(aminopropyl)piperazine 7209-38-3	LD50	1.980 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Isophorone diamine 2855-13-2	Acute toxicity estimate (ATE)	1.030 mg/kg		Expert judgement
m-Phenylenebis(methylamine) 1477-55-0	LD50	980 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

**Acute dermal toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Butadiene-acrylonitrile 68683-29-4	LD50	> 3.000 mg/kg	rabbit	not specified
benzyl alcohol 100-51-6	Acute toxicity estimate (ATE)	2.500 mg/kg		Expert judgement
Isophorone diamine 2855-13-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
2-piperazin-1- ylethylamine 140-31-8	LD50	866 mg/kg	rabbit	Draize Test
m- Phenylenebis(methylamin e) 1477-55-0	LD50	> 3.100 mg/kg	rat	not specified

**Acute inhalative toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
benzyl alcohol 100-51-6	Acute toxicity estimate (ATE)	4,17 mg/l	dust/mist			Expert judgement
benzyl alcohol 100-51-6	LC50	> 4,178 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Isophorone diamine 2855-13-2	LC50	> 5,01 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Isophorone diamine 2855-13-2	Acute toxicity estimate (ATE)	5,011 mg/l				Expert judgement
2-piperazin-1- ylethylamine 140-31-8	Acute toxicity estimate (ATE)	> 10 mg/l	dust/mist	4 h		Calculation method
m- Phenylenebis(methylamin e) 1477-55-0	LC50	1,16 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

**Skin corrosion/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
benzyl alcohol 100-51-6	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Bis(aminopropyl)piperazi ne 7209-38-3	Category 1B (corrosive)		rabbit	BASF Test
2-piperazin-1- ylethylamine 140-31-8	corrosive	20 min	rabbit	not specified

**Serious eye damage/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
benzyl alcohol 100-51-6	irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Isophorone diamine 2855-13-2	corrosive		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

**Respiratory or skin sensitization:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
benzyl alcohol 100-51-6	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Bis(aminopropyl)piperazi ne 7209-38-3	sensitising	Skin sensitisation		QSAR (Quantitative Structure Activity Relationship)
Isophorone diamine 2855-13-2	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
2-piperazin-1- ylethylamine 140-31-8	sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
m- Phenylenebis(methylamin e) 1477-55-0	Sub-Category 1B (sensitising)	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

**Germ cell mutagenicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
benzyl alcohol 100-51-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Bis(aminopropyl)piperazine 7209-38-3	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		JAPAN: Guidelines for Screening Mutagenicity Testing Of Chemicals
Isophorone diamine 2855-13-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)
2-piperazin-1-ylethylamine 140-31-8	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2-piperazin-1-ylethylamine 140-31-8	negative	DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro	with and without		not specified
2-piperazin-1-ylethylamine 140-31-8	negative	mammalian cell gene mutation assay	with and without		not specified
m-Phenylenebis(methylamine) 1477-55-0	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
m-Phenylenebis(methylamine) 1477-55-0	negative	in vitro mammalian chromosome aberration test	with and without		not specified
benzyl alcohol 100-51-6	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
2-piperazin-1-ylethylamine 140-31-8	negative	intraperitoneal		mouse	not specified

**Carcinogenicity**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
benzyl alcohol 100-51-6	not carcinogenic	oral: gavage	104 weeks once daily, 5 days/week	rat	male/female	equivalent or similar OECD Guideline 451 (Carcinogenicity Studies)

**Reproductive toxicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
benzyl alcohol 100-51-6	NOAEL P 200 mg/kg	screening	oral: gavage	mouse	not specified
2-piperazin-1-ylethylamine 140-31-8	NOAEL P 8000 ppm NOAEL F1 8000 ppm	screening	oral: drinking water	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)



**STOT-single exposure:**

No data available.

**STOT-repeated exposure::**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
benzyl alcohol 100-51-6	NOAEL 400 mg/kg	oral: gavage	13 weeks once daily, 5 days/week	rat	equivalent or similar to OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Isophorone diamine 2855-13-2	NOAEL < 60 mg/kg	oral: drinking water	13 weeks	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
2-piperazin-1- ylethylamine 140-31-8	NOAEL 2000 ppm	oral: drinking water	>= 28 d daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
m- Phenylenebis(methylamin e) 1477-55-0	LOAEL >= 600 mg/kg	oral: gavage	28 days daily	rat	Guidelines for 28-Day Repeat Dose Toxicity Test (Japan)

**Aspiration hazard:**

No data available.

**11.2 Information on other hazards**

not applicable

## SECTION 12: Ecological information

### General ecological information:

Do not empty into drains / surface water / ground water.

### 12.1. Toxicity

#### Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	LC50	Toxicity > Water solubility	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	NOEC	Toxicity > Water solubility	33 d	Danio rerio	OECD Guideline 210 (fish early lite stage toxicity test)
benzyl alcohol 100-51-6	LC50	460 mg/l	96 h	Pimephales promelas	EPA OPP 72-1 (Fish Acute Toxicity Test)
Isophorone diamine 2855-13-2	LC50	110 mg/l	96 h	Leuciscus idus	EU Method C.1 (Acute Toxicity for Fish)
2-piperazin-1-ylethylamine 140-31-8	LC50	> 100 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
m-Phenylenebis(methylamine) 1477-55-0	LC50	87,6 mg/l	96 h	Oryzias latipes	OECD Guideline 203 (Fish, Acute Toxicity Test)

#### Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Butadiene-acrylonitrile 68683-29-4	EC50	1.000 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	EC50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
benzyl alcohol 100-51-6	EC50	230 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Bis(aminopropyl)piperazine 7209-38-3	EC50	47,9 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Isophorone diamine 2855-13-2	EC50	23 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-piperazin-1-ylethylamine 140-31-8	EC50	32 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
m-Phenylenebis(methylamine) 1477-55-0	EC50	15,2 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

#### Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	NOEC	Toxicity > Water solubility	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
benzyl alcohol 100-51-6	NOEC	51 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Isophorone diamine 2855-13-2	NOEC	3 mg/l	21 d	Daphnia magna	OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test)
m-Phenylenebis(methylamine) 1477-55-0	NOEC	4,7 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

**Toxicity (Algae):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Butadiene-acrylonitrile 68683-29-4	EC50	> 1.000 mg/l	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	EC50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	NOEC	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzyl alcohol 100-51-6	EC50	770 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzyl alcohol 100-51-6	NOEC	310 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Bis(aminopropyl)piperazine 7209-38-3	EC50	32,3 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Bis(aminopropyl)piperazine 7209-38-3	NOEC	6,97 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Isophorone diamine 2855-13-2	EC10	11,2 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
Isophorone diamine 2855-13-2	EC50	> 50 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
2-piperazin-1-ylethylamine 140-31-8	NOEC	31 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-piperazin-1-ylethylamine 140-31-8	EC50	495 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
m-Phenylenebis(methylamine) 1477-55-0	EC50	33,3 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
m-Phenylenebis(methylamine) 1477-55-0	NOEC	22,9 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)

**Toxicity to microorganisms**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	EC0	> 10.000 mg/l	30 min		not specified
benzyl alcohol 100-51-6	EC10	658 mg/l	17 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)
Isophorone diamine 2855-13-2	EC10	1.120 mg/l	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)
2-piperazin-1-ylethylamine 140-31-8	EC10	100 mg/l	17 h		not specified
m-Phenylenebis(methylamine) 1477-55-0	EC50	> 1.000 mg/l	30 min	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

**12.2. Persistence and degradability**

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
benzyl alcohol 100-51-6	readily biodegradable	aerobic	92 - 96 %	14 d	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Bis(aminopropyl)piperazine 7209-38-3	not readily biodegradable.	aerobic	0 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Isophorone diamine 2855-13-2	not readily biodegradable.	aerobic	8 %	28 d	EU Method C.4-A (Determination of the "Ready" Biodegradability Dissolved Organic Carbon (DOC) Die-Away Test)
2-piperazin-1-ylethylamine 140-31-8	under test conditions no biodegradation observed	aerobic	0 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
m-Phenylenebis(methylamine) 1477-55-0	not readily biodegradable.	aerobic	49 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)

### 12.3. Bioaccumulative potential

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	74,4			Lepomis macrochirus	other guideline:

### 12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
benzyl alcohol 100-51-6	1,05	20 °C	EU Method A.8 (Partition Coefficient)
Bis(aminopropyl)piperazine 7209-38-3	-1,43	25 °C	QSAR (Quantitative Structure Activity Relationship)
Isophorone diamine 2855-13-2	0,99	23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
2-piperazin-1-ylethylamine 140-31-8	-1,48		OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
m-Phenylenebis(methylamine) 1477-55-0	0,18	25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

### 12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Barite (Ba(SO <sub>4</sub> )) 13462-86-7	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.
benzyl alcohol 100-51-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Bis(aminopropyl)piperazine 7209-38-3	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Isophorone diamine 2855-13-2	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
2-piperazin-1-ylethylamine 140-31-8	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
m-Phenylenebis(methylamine) 1477-55-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

### 12.6. Endocrine disrupting properties

not applicable

### 12.7. Other adverse effects

No data available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Product disposal:**

Do not empty into drains / surface water / ground water.

Dispose of in accordance with local and national regulations.

**Disposal of uncleaned packages:**

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

**Waste code**

08 04 09\* waste adhesives and sealants containing organic solvents and other dangerous substances

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

**SECTION 14: Transport information****14.1. UN number**

ADR	2735
RID	2735
ADN	2735
IMDG	2735
IATA	2735

**14.2. UN proper shipping name**

ADR	AMINES, LIQUID, CORROSIVE, N.O.S. (Bis(aminopropyl)piperazine,Isophoronediamine)
RID	AMINES, LIQUID, CORROSIVE, N.O.S. (Bis(aminopropyl)piperazine,Isophoronediamine)
ADN	AMINES, LIQUID, CORROSIVE, N.O.S. (Bis(aminopropyl)piperazine,Isophoronediamine)
IMDG	AMINES, LIQUID, CORROSIVE, N.O.S. (Bis(aminopropyl)piperazine,Isophoronediamine)
IATA	Amines, liquid, corrosive, n.o.s. (Bis(aminopropyl)piperazine,Isophoronediamine)

**14.3. Transport hazard class(es)**

ADR	8
RID	8
ADN	8
IMDG	8
IATA	8

**14.4. Packing group**

ADR	II
RID	II
ADN	II
IMDG	II
IATA	II

**14.5. Environmental hazards**

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

**14.6. Special precautions for user**

ADR	not applicable
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	Tunnelcode: (E)
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EC)	< 3 %

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

**National regulations/information (Germany):**

WGK:	WGK 2: significantly water endangering (Ordinance on facilities for handling substances that are hazardous to water (AwSV) ) Classification according to AwSV, Annex 1 (5.2)
Storage class according to TRGS 510:	8A

## SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H302 Harmful if swallowed.  
 H311 Toxic in contact with skin.  
 H314 Causes severe skin burns and eye damage.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H361 Suspected of damaging fertility or the unborn child.  
 H412 Harmful to aquatic life with long lasting effects.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

### Further information:

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This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

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