



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

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LOCTITE EA 3474 Part A

SDS No. : 173483  
V003.0

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

#### 1.1. Product identifier

LOCTITE EA 3474 Part A

#### 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

SDSinfo.Adhesive@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):

<b>Hazard pictogram:</b>		
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**Contains**

Bisphenol A Diglycidyl Ether

1,3-Propanediol, 2,2-bis(hydroxymethyl)-, polymer with (chloromethyl)oxirane

Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

<b>Signal word:</b>	<b>Warning</b>
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<b>Hazard statement:</b>	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.
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<b>Supplemental information</b>	<b>Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.</b>
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<b>Precautionary statement:</b>	P273 Avoid release to the environment.
<b>Prevention</b>	P280 Wear protective gloves.

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

**2.3. Other hazards**

None if used properly.

**Following substances are present in a concentration  $\geq$  the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):**

This mixture does not contain any substances in a concentration  $\geq$  the concentration limit for depiction in Section 3 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:**

<b>Hazardous components CAS-No. EC Number REACH-Reg No.</b>	<b>Concentration</b>	<b>Classification</b>	<b>Specific Conc. Limits, M- factors and ATEs</b>	<b>Add. Information</b>
Bisphenol A Diglycidyl Ether 1675-54-3 216-823-5 01-2119456619-26	25- < 40 %	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411	Eye Irrit. 2; H319; C >= 5 % Skin Irrit. 2; H315; C >= 5 %	
Reaction products of hexane-1,6- diol with 2- (chloromethyl)oxirane 933999-84-9 618-939-5 01-2119463471-41	1- < 2,5 %	Skin Irrit. 2, H315 Skin Sens. 1A, H317 Eye Irrit. 2, H319 Aquatic Chronic 3, H412		
1,3-Propanediol, 2,2- bis(hydroxymethyl)-, polymer with (chloromethyl)oxirane 30973-88-7	1- < 2,5 %	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 3, H412		
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7 236-675-5 01-2119489379-17	1- < 2,5 %			
oxirane, mono[(C12-14- alkyloxy)methyl] derivs. 68609-97-2 271-846-8 01-2119485289-22	0,1- < 1 %	Skin Irrit. 2, H315 Skin Sens. 1, H317		

If no ATE values are displayed, please refer to LD/LC50 values in Section 11.  
For full text of the H - statements and other abbreviations see section 16 "Other information".

**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**

EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

SKIN: Rash, Urticaria.

**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.

Avoid dust formation.

### 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.

Scrape up as much material as possible.

Sweep up spilled material. Avoid creating dust.

Store in a partly filled, closed container until 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

Ensure good ventilation/extraction.

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
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	
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	aqua (freshwater)		0,006 mg/l				
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	Freshwater - intermittent		0,018 mg/l				
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	aqua (marine water)		0,001 mg/l				
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	Marine water - intermittent		0,002 mg/l				
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	sewage treatment plant (STP)		10 mg/l				
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	sediment (freshwater)				0,341 mg/kg		
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	sediment (marine water)				0,034 mg/kg		
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	Air						no hazard identified
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	Soil				0,065 mg/kg		
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	oral				11 mg/kg		
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	aqua (freshwater)		0,011 mg/l				
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Freshwater - intermittent		0,115 mg/l				
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	aqua (marine water)		0,001 mg/l				
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	sewage treatment plant (STP)		1,00 mg/l				
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	sediment (freshwater)				0,283 mg/kg		
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	sediment (marine water)				0,028 mg/kg		
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Soil				0,223 mg/kg		
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Predator						no potential for bioaccumulation
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	aqua (freshwater)		0,106 mg/l				
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	aqua (intermittent releases)		0,072 mg/l				
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	aqua (marine water)		0,011 mg/l				
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	sewage treatment plant (STP)		10 mg/l				
Oxirane, mono[(C12-14-alkyloxy)methyl]	sediment				307,16		

derivs. 68609-97-2	(freshwater)				mg/kg		
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	sediment (marine water)				30,72 mg/kg		
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	Soil				1,234 mg/kg		

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

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	Workers	inhalation	Long term exposure - systemic effects		4,93 mg/m <sup>3</sup>	no hazard identified
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	Workers	dermal	Long term exposure - systemic effects		0,75 mg/kg	no hazard identified
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	General population	inhalation	Long term exposure - systemic effects		0,87 mg/m <sup>3</sup>	no hazard identified
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	General population	dermal	Long term exposure - systemic effects		0,0893 mg/kg	no hazard identified
2,2'-[(1-Methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane 1675-54-3	General population	oral	Long term exposure - systemic effects		0,5 mg/kg	no hazard identified
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	inhalation	Long term exposure - local effects		0,44 mg/m <sup>3</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	inhalation	Long term exposure - systemic effects		10,57 mg/m <sup>3</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	inhalation	Acute/short term exposure - systemic effects		10,57 mg/m <sup>3</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	dermal	Long term exposure - systemic effects		6 mg/kg	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	dermal	Long term exposure - local effects		0,0266 mg/cm <sup>2</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	dermal	Acute/short term exposure - local effects		0,0266 mg/cm <sup>2</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	General population	inhalation	Long term exposure - local effects		0,27 mg/m <sup>3</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	General population	inhalation	Long term exposure - systemic effects		5,29 mg/m <sup>3</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	General population	inhalation	Acute/short term exposure - systemic effects		5,29 mg/m <sup>3</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	General population	dermal	Long term exposure - systemic effects		3 mg/kg	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	General population	dermal	Long term exposure - local effects		0,0136 mg/cm <sup>2</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	General population	dermal	Acute/short term exposure - local effects		0,0136 mg/cm <sup>2</sup>	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	General population	oral	Long term exposure - systemic effects		1,5 mg/kg	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	General population	oral	Acute/short term exposure - systemic effects		1,5 mg/kg	no potential for bioaccumulation
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	Workers	Inhalation	Long term exposure - systemic effects		3,6 mg/m <sup>3</sup>	
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	Workers	dermal	Long term exposure - systemic effects		1 mg/kg	
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	General population	Inhalation	Long term exposure - systemic effects		0,87 mg/m <sup>3</sup>	
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	General population	dermal	Long term exposure -		0,5 mg/kg	



68609-97-2			systemic effects			
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	General population	oral	Long term exposure - systemic effects		0,5 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**

Delivery form	paste
Colour	grey
Odor	characteristic
Physical state	solid
Solidification temperature	Not applicable, Product is a solid.
Initial boiling point	> 100 °C (> 212 °F)
Flammability	The product is not flammable.
Explosive limits	Not applicable, Product is a solid.
Flash point	> 110 °C (> 230 °F)
Auto-ignition temperature	Not applicable, The product is not flammable.
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use
pH (20 °C (68 °F); Conc.: 100 % product)	6 - 9

Viscosity (kinematic)	Not applicable, Product is a solid.
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Insoluble
Partition coefficient: n-octanol/water	Not applicable
Vapour pressure (20 °C (68 °F))	Mixture 0,01 hPa
Density (20 °C (68 °F))	2 g/cm <sup>3</sup> None
Relative vapour density:	Not applicable, Product is a solid.
Particle characteristics	Not applicable, mixture is a paste.

## 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

### 11.1 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
Bisphenol A Diglycidyl Ether 1675-54-3	LD50	> 2.000 mg/kg	rat	OECD Guideline 420 (Acute Oral Toxicity)
Reaction products of hexane-1,6-diol with 2- (chloromethyl)oxirane 933999-84-9	LD50	2.189 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	LD50	> 5.000 mg/kg	rat	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)
oxirane, mono[(C12-14- alkyloxy)methyl] derivs. 68609-97-2	LD50	26.800 mg/kg	rat	not specified

**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
Bisphenol A Diglycidyl Ether 1675-54-3	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Reaction products of hexane-1,6-diol with 2- (chloromethyl)oxirane 933999-84-9	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	LD50	≥ 10.000 mg/kg	hamster	not specified
oxirane, mono[(C12-14- alkyloxy)methyl] derivs. 68609-97-2	LD50	> 4.000 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
Titanium dioxide < 1% particles with diameter ≤ 10 µm 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
Bisphenol A Diglycidyl Ether 1675-54-3	moderately irritating	24 h	rabbit	Draize Test
Reaction products of hexane-1,6-diol with 2- (chloromethyl)oxirane 933999-84-9	irritating	24 h	rabbit	EPA Guideline
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	not irritating	4 h	rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
oxirane, mono[(C12-14- alkyloxy)methyl] derivs. 68609-97-2	moderately irritating	24 h	rabbit	EPA OTS 798.4470 (Acute Dermal Irritation)

**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
Bisphenol A Diglycidyl Ether 1675-54-3	slightly irritating		rabbit	Draize Test
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	irritating		rabbit	equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	slightly 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
Bisphenol A Diglycidyl Ether 1675-54-3	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Sub-Category 1A (sensitising)	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	sensitising	Buehler test	guinea pig	EPA OPPTS 870.2600 (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
Bisphenol A Diglycidyl Ether 1675-54-3	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)
Bisphenol A Diglycidyl Ether 1675-54-3	negative with metabolic activation	mammalian cell gene mutation assay	with and without		not specified
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	positive	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	positive	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Bisphenol A Diglycidyl Ether 1675-54-3	negative	oral: gavage		mouse	not specified
Bisphenol A Diglycidyl Ether 1675-54-3	negative	oral: gavage		rat	OECD Guideline 488 (In Vivo Transgenic Cell Gene Mutation Assays)
Bisphenol A Diglycidyl Ether 1675-54-3	negative	oral: gavage		mouse	not specified
Bisphenol A Diglycidyl Ether 1675-54-3	negative	oral: gavage		mouse	not specified
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	negative	oral: unspecified		rat	OECD Guideline 486 (Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	negative	oral: gavage		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	negative	oral: gavage		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
oxirane, mono[(C12-14-	negative	intraperitoneal		mouse	OECD Guideline 474

alkyloxy)methyl] derivs. 68609-97-2					(Mammalian Erythrocyte Micronucleus Test)
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**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
Bisphenol A Diglycidyl Ether 1675-54-3	not carcinogenic	oral: gavage	24 m daily	rat	male/female	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
Bisphenol A Diglycidyl Ether 1675-54-3	not carcinogenic	dermal	2 y 3 times/w	mouse	male	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	not carcinogenic	inhalation	24 m 6 h/d; 5 d/w	rat	male/female	OECD Guideline 453 (Combined Chronic Toxicity / 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
Bisphenol A Diglycidyl Ether 1675-54-3	NOAEL P ≥ 50 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 < 1% particles with diameter ≤ 10 µm 13463-67-7	NOAEL P > 1.000 mg/kg NOAEL F1 > 1.000 mg/kg		oral: gavage	rat	OECD Guideline 421 (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
Bisphenol A Diglycidyl Ether 1675-54-3	NOAEL 50 mg/kg	oral: gavage	14 w daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Bisphenol A Diglycidyl Ether 1675-54-3	NOAEL 100 mg/kg	dermal	13 w 3 times/w	mouse	OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	NOAEL 300 mg/kg	oral: gavage	90 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	NOAEL 1.000 mg/kg	oral: gavage	90 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	NOAEL >= 1 mg/kg	oral: gavage	13 w 5 d/w	rat	OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

**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.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Bisphenol A Diglycidyl Ether 1675-54-3	LC50	1,2 mg/l	96 h	Oncorhynchus mykiss	EPA-660 (Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	LC50	30 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,3-Propanediol, 2,2-bis(hydroxymethyl)-, polymer with (chloromethyl)oxirane 30973-88-7	LC50	12,7 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	LC50	Toxicity > Water solubility	48 h	Danio rerio	other guideline:
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	NOEC	Toxicity > Water solubility	8 d	Danio rerio	OECD Guideline 212 (Fish, Short-term Toxicity Test on Embryo and Sac-Fry Stages)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	LL50	> 100 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)

**Toxicity (aquatic invertebrates):**

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

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Bisphenol A Diglycidyl Ether 1675-54-3	EC50	2,7 mg/l	48 h	Daphnia magna	other guideline:
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	EC50	47 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
1,3-Propanediol, 2,2-bis(hydroxymethyl)-, polymer with (chloromethyl)oxirane 30973-88-7	EC50	23,9 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	EC50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	EL50	7,2 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

**Chronic toxicity (aquatic invertebrates):**



The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Bisphenol A Diglycidyl Ether 1675-54-3	NOEC	0,3 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	NOELR	56 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.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Bisphenol A Diglycidyl Ether 1675-54-3	EC50	> 11 mg/l	72 h	Scenedesmus capricornutum	other guideline:
Bisphenol A Diglycidyl Ether 1675-54-3	NOEC	4,2 mg/l	72 h	Scenedesmus capricornutum	other guideline:
1,3-Propanediol, 2,2-bis(hydroxymethyl)-, polymer with (chloromethyl)oxirane 30973-88-7	NOEC	1,7 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,3-Propanediol, 2,2-bis(hydroxymethyl)-, polymer with (chloromethyl)oxirane 30973-88-7	EC50	15 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	EC50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	NOEC	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)

#### Toxicity (microorganisms):

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

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Bisphenol A Diglycidyl Ether 1675-54-3	IC50	> 100 mg/l	3 h	activated sludge, industrial	other guideline:
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	IC50	> 100 mg/l	3 h	activated sludge, domestic	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	EC50	Toxicity > Water solubility	3 h	activated sludge	ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge)

## 12.2. Persistence and degradability

The table below presents the data of the classified substances present in the mixture.

<b>Hazardous substances CAS-No.</b>	<b>Result</b>	<b>Test type</b>	<b>Degradability</b>	<b>Exposure time</b>	<b>Method</b>
Bisphenol A Diglycidyl Ether 1675-54-3	not inherently biodegradable	not specified	12 %	28 d	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
Bisphenol A Diglycidyl Ether 1675-54-3	not readily biodegradable.	aerobic	5 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Reaction products of hexane- 1,6-diol with 2- (chloromethyl)oxirane 933999-84-9	not readily biodegradable.	aerobic	47 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
1,3-Propanediol, 2,2- bis(hydroxymethyl)-, polymer with (chloromethyl)oxirane 30973-88-7	not readily biodegradable.		< 60 %	28 day	OECD 301 A - F
oxirane, mono[(C12-14- alkyloxy)methyl] derivs. 68609-97-2	readily biodegradable	aerobic	87 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

### 12.3. Bioaccumulative potential

No data available.

#### 12.4. Mobility in soil

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	LogPow	Temperature	Method
Bisphenol A Diglycidyl Ether 1675-54-3	> 2,64 - 3,78	25 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	0,822	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	3,77	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

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

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	PBT / vPvB
Bisphenol A Diglycidyl Ether 1675-54-3	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Titanium dioxide < 1% particles with diameter ≤ 10 µm 13463-67-7	According to Annex XIII to Regulation (EC) No 1907/2006, a PBT and vPvB assessment shall not be conducted for inorganic substances.
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	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:

Dispose of in accordance with local and national regulations.

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

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 or ID 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-A Epichlorhydrin resin)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin)
IATA	Environmentally hazardous substance, liquid, n.o.s. (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	Environmentally Hazardous
RID	Environmentally Hazardous
ADN	Environmentally Hazardous
IMDG	Marine Pollutant
IATA	Environmentally Hazardous

**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)	< 3,00 %

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

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

WGK:	WGK 3: highly hazardous to water (Ordinance on facilities for handling substances that are hazardous to water (AwSV) ) Classification according to AwSV, Annex 1 (5.2)
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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:

- 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.
- 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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