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

SDS No. : 178499
V004.0

LOCTITE EA 3474 known as Loctite 3474A&B HYSOL/Loctite

Revision: 10.04.2026
printing date: 11.04.2026
Replaces version from: 29.09.2025

Kit/Multi-component Product

1. SDS No.173483 - LOCTITE EA 3474 Part A
2. SDS No.173484 - LOCTITE EA 3474 Part B

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

LOCTITE EA 3474 Part A

SDS No. : 173483
V004.0
Revision: 10.04.2026
printing date: 11.04.2026
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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

UFI: 7R8H-RXWQ-020Y-VVJ8

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

Intended use:
Epoxy resin

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 www.mysds.henkel.com or 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.	
Toxic to reproduction	Category 1B
H360F May damage fertility.	
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 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

Signal word: Danger

Hazard statement:
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H360F May damage fertility.
H411 Toxic to aquatic life with long lasting effects.

Supplemental information Restricted to professional users.

Precautionary statement: Prevention
P201 Obtain special instructions before use.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing.

Precautionary statement: Response
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P308+P313 IF exposed or concerned: Get medical advice/attention.
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.

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

None

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 No REACH-Reg. No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Bisphenol A Diglycidyl Ether 1675-54-3 216-823-5 01-2119456619-26	25- < 40 %	Aquatic Chronic 2, H411 Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319	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 01-2119463471-41	1- < 2,5 %	Skin Irrit. 2, H315 Skin Sens. 1A, H317 Eye Irrit. 2, H319 Repr. 1B, H360F		
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		

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
SKIN: Rash, Urticaria.

SKIN: Redness, inflammation.

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:
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 (CO2) and nitrogen oxides (NOx) 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.
Protect against contamination.
Store in sealed original container protected against moisture.
Store in a cool, well-ventilated place.
Refer to Technical Data Sheet.

7.3. Specific end use(s)
Epoxy resin

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Germany

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
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
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			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	aqua (freshwater)		0,006 mg/l				
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Freshwater - intermittent		0,018 mg/l				
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	aqua (marine water)		0,001 mg/l				
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Marine water - intermittent		0,002 mg/l				
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	sewage treatment plant (STP)		10 mg/l				
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	sediment (freshwater)				0,341 mg/kg		
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	sediment (marine water)				0,034 mg/kg		
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Air						no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Soil				0,065 mg/kg		
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	oral				11 mg/kg		
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	aqua (freshwater)		0,111 mg/l				
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Freshwater - intermittent		0,111 mg/l				
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	aqua (marine water)		0,011 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)				2,29 mg/kg		
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	sediment (marine water)				0,229 mg/kg		
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Soil				1,8 mg/kg		
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Predator						no potential for bioaccumulation

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Workers	inhalation	Long term exposure - systemic effects		4,93 mg/m3	no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Workers	dermal	Long term exposure - systemic effects		0,75 mg/kg	no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	General population	inhalation	Long term exposure - systemic effects		0,87 mg/m3	no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	General population	dermal	Long term exposure - systemic effects		0,0893 mg/kg	no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	General population	oral	Long term exposure - systemic effects		0,5 mg/kg	no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Workers	Inhalation	Long term exposure - local effects			no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Workers	Inhalation	Acute/short term exposure - local effects			no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Workers	dermal	Long term exposure - local effects			no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	Workers	dermal	Acute/short term exposure - local effects			no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	General population	Inhalation	Long term exposure - local effects			no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	General population	Inhalation	Acute/short term exposure - local effects			no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	General population	dermal	Long term exposure - local effects			no hazard identified
Biphenyl-4-(2,3-epoxypropoxy)propane 1675-54-3	General population	dermal	Acute/short term exposure - local effects			no hazard identified
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	inhalation	Long term exposure - systemic effects		3,88 mg/m3	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		3,88 mg/m3	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	inhalation	Long term exposure - local effects		0,44 mg/m3	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	inhalation	Acute/short term exposure - local effects			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		2,2 mg/kg	no potential for bioaccumulation
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	Workers	dermal	Acute/short term exposure - systemic effects			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/cm2	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/cm2	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		1,94 mg/m3	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		1,94 mg/m3	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/m3	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 - local effects			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/cm2	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		1,1 mg/kg	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 - systemic effects			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/cm2	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/cm2	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		0,55 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		0,55 mg/kg	no potential for bioaccumulation

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; >= 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; >= 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	Gray / 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); Closed cup
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 Mixture
Vapour pressure (20 °C (68 °F))	0,01 hPa
Density (20 °C (68 °F))	2 g/cm3 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.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Value type	Value	Species	Method

Acute dermal toxicity:

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

Based on available data, the classification criteria are not met.

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)

Acute inhalative toxicity:

No data available.

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
Bisphenol A Diglycidyl Ether 1675-54-3	irritating			Weight of evidence
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	irritating	24 h	rabbit	EPA Guideline

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	irritating			Weight of evidence
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)

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)

Germ cell mutagenicity:

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

Based on available data, the classification criteria are not met.

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)

Carcinogenicity

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

Based on available data, the classification criteria are not met.

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)

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)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	NOAEL P 55 mg/kg NOAEL F1 55 mg/kg	one-generation study	oral: gavage	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.

Based on available data, the classification criteria are not met.

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)

Aspiration hazard:

No data available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

No substance data available.

No data available.

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)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	EC10	1,11 mg/l	35 d	Danio rerio	OECD Guideline 210 (fish early life stage 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)

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)

Chronic 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	NOEC	0,3 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	EC10	8,93 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:
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	EC50	27 mg/l	72 h	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	NOEC	4 mg/l	72 h	Raphidocelis subcapitata (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	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)

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)

12.2. Persistence and degradability

Biodegradability (Screening Tests):
The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
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

No substance data available.

(Bio)degradability (Simulation Tests):
No data available.

12.3. Bioaccumulative potential

Partition Coefficient (octanol/water)
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)

Bioconcentration factor (BCF)
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.	LogKoc	pH	Method
Bisphenol A Diglycidyl Ether 1675-54-3	2,65		QSAR (Quantitative Structure Activity Relationship)
Reaction products of hexane-1,6-diol with 2-(chloromethyl)oxirane 933999-84-9	2,98		OECD Guideline 121 (OECD 121: Estimation of the Koc on Soil and on Sewage Sludge using HPLC)

12.5. Results of PBT / vPvB / PMT / vPvM assessment

PBT/vPvB
This mixture does not contain any substances that are assessed to be a PBT or vPvB.
Based on available data, the classification criteria are not met.

PMT/vPvM
This mixture does not contain any substances that are assessed to be a PMT or vPvM.
Based on available data, the classification criteria are not met.

12.6. Endocrine disrupting properties

No substance data available.

No data available.

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 or ID number

ADR	3077
RID	3077
ADN	3077
IMDG	3077
IATA	3077

14.2. UN proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Epoxy resin)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Epoxy resin)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Epoxy resin)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Epoxy resin)
IATA	Environmentally hazardous substance, solid, n.o.s. (Epoxy 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
	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), NZ 4.3(10) 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 2024/590):	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 %
Seveso III (2012/18/EU):	E2, Hazardous to the Aquatic Environment in Category Chronic 2

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)
Storage class according to TRGS 510:	6.1C
General remarks (DE):	This product is in scope of the German regulation "ChemikalienVerbotsVerordnung"

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

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.
H360F May damage fertility.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Abbreviations and acronyms:

ADG(-Code): Australian Dangerous Goods (Code)
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM: American Society for Testing and Materials
ATE: acute toxicity estimate
AS: Australian Standard
AwSV: Ordinance on Installations for the Handling of Substances Hazardous to Water
CAS: Chemical Abstract Service
CLP: Regulation (EC) No 1272/2008
CMR: cancerogenic, mutagenic or reprotoxic
DIN: German Institute for Standardization
ECx: Effective concentration (x% effective level)
ECHA: European Chemicals Agency
EC-Nummer: Substance number in the EU-inventories EINECS/ELINCS
ECTLV: European community threshold limit value
ED:Substance identified as having endocrine disrupting properties
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
EN : European Standard
ENCS: Japanese chemical inventory
EPA: US Environmental Protection Agency
EU: European Union
EU EXPLD1: Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD2: Substance listed in Annex II, Reg (EC) No. 2019/1148
EWC: European Waste Catalogue
GHS: Globally Harmonised System for Classification and Labelling of Chemicals
GLP: Good Laboratory Practice
HSNO: Hazardous Substances and New Organisms
IARC: International Agency for Research of Cancer
IATA: International Air Transport Association
IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization
IMDG-Code: International Maritime Code for Dangerous Goods
IMO: International Maritime Organization
ISO: International Standardization Organisation
LC50: Median lethal concentration
LD50: Median lethal dose
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
n.o.s.: not otherwise specified
NO(A)EC: No (adverse) effect concentration
NO(A)EL: No (adverse) effect level
NZS: New Zealand Standard
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit
OPPT: US EPA Office of Pollution Prevention and Toxics
OPPTS: US EPA Office of Prevention, Pesticides and Toxic Substances
PBT: Persistent, bioaccumulative, toxic
PMT: Persistent, mobile and toxic
(Q)SAR: (Quantitative) structure–activity relationship
REACH: Regulation (EC) No. 1907/2006
RID: Regulations concerning the International Transport of Dangerous Goods by Rail
SADT: Self Accelerating Decomposition Temperature
SDS: Safety Data Sheet
STOT: Specific Target Organ Toxicity
STOT SE: Specific Target Organ Toxicity - single exposure

STOT RE: Specific Target Organ Toxicity - repeated exposure
SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons
SVHC: Substance of very high concern (REACH Candidate List)
TRGS: German Technical Rules for hazardous substances
UN: United Nations
VOC: Volatile Organic Compound
814.018 VOC Reg CH: Swiss Ordinance 814.018 on the Incentive Tax on Volatile Organic Compounds
vPvB: Very persistent, very bioaccumulative
vPvM: Very persistent and very mobile
VwVwS: Administrative Regulation on Substances Hazardous to Waters
WGK: Water hazard class

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 (SDSinfo.Adhesive@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,
Henkel is committed to creating a sustainable future by promoting opportunities along the entire value chain. If you would like to contribute by switching from a paper to the electronic version of SDS, please contact the local Customer Service representative. We recommend to use a non-personal email address (e.g. SDS@your_company.com).

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.

LOCTITE EA 3474 Part B

SDS No. : 173484
V004.0
Revision: 10.04.2026
printing date: 11.04.2026
Replaces version from: 09.04.2026

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

1.1. Product identifier
LOCTITE EA 3474 Part B

UFI: 1FPJ-DX7R-W20V-KN53

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
Epoxy Hardener

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 www.mysds.henkel.com or 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.	
Chronic hazards to the aquatic environment	Category 3
H412 Harmful to aquatic life with long lasting effects.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

Isophorone diamine

benzyl alcohol

Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine

Formaldehyde, polymer with benzenamine, hydrogenated
N-(3-(Trimethoxysilyl)propyl)ethylenediamine

3,6-diazaoctanethylenediamine

4,4'-Methylenebis(cyclohexylamine)

Signal word: Danger

Hazard statement:

H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement: Prevention

P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement: Response

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.

2.3. Other hazards

None if used properly.

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

None

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 No REACH-Reg. No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Isophorone diamine 2855-13-2 220-666-8 01-2119514687-32	5- < 10 %	Skin Sens. 1A, H317 Eye Dam. 1, H318 Skin Corr. 1B, H314 Acute Tox. 4, H302	Skin Sens. 1A; H317; C >= 0,001 % ===== oral:ATE = 1.030 mg/kg inhalation:ATE = 5,011 mg/l;dust/mist	
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	3- < 5 %	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 2, H411		
benzyl alcohol 100-51-6 202-859-9 01-2119492630-38	2,5- < 5 %	Acute Tox. 4, H302 Eye Irrit. 2, H319 Skin Sens. 1B, H317	oral:ATE = 1.200 mg/kg	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2 01-2119983522-33	1- < 2,5 %	Acute Tox. 3, H301 Skin Corr. 1C, H314 STOT RE 2, H373 Aquatic Chronic 3, H412 Eye Dam. 1, H318 Skin Sens. 1, H317	dermal:ATE = > 2.000 mg/kg	
1,5-Pentanediamine, 2-methyl- 15520-10-2 239-556-6 01-2119976310-41	1- < 2,5 %	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Corr. 1A, H314 STOT SE 3, H335	inhalation:ATE = 1,225 mg/l;dust/mist	
Salicylic acid 69-72-7 200-712-3 01-2119486984-17	1- < 2,5 %	Repr. 2, H361d Acute Tox. 4, H302 Eye Dam. 1, H318		
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2 202-013-9 01-2119560597-27	1- < 2,5 %	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319		
N-(3-(Trimethoxysilyl)propyl)ethylene diamine 1760-24-3 217-164-6 01-2119970215-39	0,1- < 1 %	Skin Sens. 1A, H317 Eye Dam. 1, H318 Acute Tox. 4, H332 STOT RE 2, Inhalation, H373	inhalation:ATE = 1,49 mg/l;dust/mist	
3,6-diazaoctanethylenediamine 112-24-3 203-950-6 01-2119487919-13	0,25- < 1 %	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Sens. 1, H317 Skin Corr. 1B, H314 Aquatic Chronic 3, H412		
4,4'-Methylenebis(cyclohexylamine) 1761-71-3 217-168-8 01-2119541673-38 01-2119979542-27	0,1- < 1 %	Acute Tox. 4, H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 STOT RE 2, Oral, H373 Eye Dam. 1, H318		

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
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 (CO2) and nitrogen oxides (NOx) 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.
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
Store in sealed original container.
Store in a cool, well-ventilated place.
Refer to Technical Data Sheet.

7.3. Specific end use(s)
Epoxy Hardener

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Germany

Ingredient [Regulated substance]	ppm	mg/m^3	Value type	Short term exposure limit category / Remarks	Regulatory list
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

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
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				
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	aqua (freshwater)		0,00434 mg/l				
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	aqua (marine water)		0,00043 mg/l				
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	aqua (intermittent releases)		0,0434 mg/l				
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	sewage treatment plant (STP)		3,84 mg/l				
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	sediment (freshwater)				434,02 mg/kg		
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	sediment (marine water)				43,4 mg/kg		
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	Soil				86,78 mg/kg		
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	Freshwater - intermittent		2,3 mg/l				
Benzyl alcohol 100-51-6	aqua (freshwater)		1 mg/l				
Benzyl alcohol 100-51-6	Predator						no potential for bioaccumulation
Formaldehyde, polymer with benzenamine, hydrogenated	aqua (freshwater)		0,015 mg/l				

135108-88-2							
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	aqua (marine water)		0,002 mg/l				
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	aqua (intermittent releases)		0,15 mg/l				
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sewage treatment plant (STP)		1,9 mg/l				
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sediment (freshwater)				15 mg/kg		
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sediment (marine water)				1,5 mg/kg		
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Soil				1,8 mg/kg		
2-Methylpentane-1,5-diamine 15520-10-2	aqua (freshwater)		0,42 mg/l				
2-Methylpentane-1,5-diamine 15520-10-2	aqua (marine water)		0,042 mg/l				
2-Methylpentane-1,5-diamine 15520-10-2	sewage treatment plant (STP)		1250 mg/l				
2-Methylpentane-1,5-diamine 15520-10-2	sediment (freshwater)				7,58 mg/kg		
2-Methylpentane-1,5-diamine 15520-10-2	sediment (marine water)				0,758 mg/kg		
2-Methylpentane-1,5-diamine 15520-10-2	Soil				1,27 mg/kg		
2-Methylpentane-1,5-diamine 15520-10-2	aqua (intermittent releases)		0,42 mg/l				
Salicylic acid 69-72-7	aqua (freshwater)		0,2 mg/l				
Salicylic acid 69-72-7	aqua (marine water)		0,02 mg/l				
Salicylic acid 69-72-7	Freshwater - intermittent		1 mg/l				
Salicylic acid 69-72-7	sewage treatment plant (STP)		162 mg/l				
Salicylic acid 69-72-7	sediment (freshwater)				1,42 mg/kg		
Salicylic acid 69-72-7	sediment (marine water)				0,142 mg/kg		
Salicylic acid 69-72-7	Soil				0,166 mg/kg		
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	aqua (freshwater)		0,046 mg/l				
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	aqua (marine water)		0,005 mg/l				
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Freshwater - intermittent		0,46 mg/l				
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Marine water - intermittent		0,046 mg/l				
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	sewage treatment plant (STP)		0,2 mg/l				
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	sediment (freshwater)				0,262 mg/kg		
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	sediment (marine water)				0,026 mg/kg		
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Soil				0,025 mg/kg		
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	aqua (freshwater)		0,05 mg/l				
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	aqua (marine water)		0,005 mg/l				
N-(3-	Freshwater -		0,072 mg/l				

(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	intermittent						
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	sediment (freshwater)				0,181 mg/kg		
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	sediment (marine water)				0,018 mg/kg		
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Soil				0,007 mg/kg		
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	sewage treatment plant (STP)		20 mg/l				
3,6-diazaoctanethylenediamine 112-24-3	aqua (freshwater)		0,027 mg/l				
3,6-diazaoctanethylenediamine 112-24-3	aqua (marine water)		0,003 mg/l				
3,6-diazaoctanethylenediamine 112-24-3	Sewage treatment plant		0,13 mg/l				
3,6-diazaoctanethylenediamine 112-24-3	sediment (freshwater)				8,572 mg/kg		
3,6-diazaoctanethylenediamine 112-24-3	sediment (marine water)				0,857 mg/kg		
3,6-diazaoctanethylenediamine 112-24-3	Soil				1,25 mg/kg		
3,6-diazaoctanethylenediamine 112-24-3	Freshwater - intermittent		0,2 mg/l				
3,6-diazaoctanethylenediamine 112-24-3	Marine water - intermittent		0,02 mg/l				
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	aqua (intermittent releases)		0,08 mg/l				
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	sediment (freshwater)				136,6 mg/kg		
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	aqua (marine water)		0,008 mg/l				
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	sediment (marine water)				13,7 mg/kg		
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	sewage treatment plant (STP)		3,2 mg/l				
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Soil				27,3 mg/kg		
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	aqua (freshwater)		0,08 mg/l				

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
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	Workers	dermal	Acute/short term exposure - local effects			
3-aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	Workers	dermal	Long term exposure - local effects			
3-aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	General population	oral	Acute/short term exposure - systemic effects		0,3 mg/kg	
3-aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	General population	oral	Long term exposure - systemic effects		0,3 mg/kg	
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	Workers	inhalation	Long term exposure - systemic effects		3,9 mg/m3	
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	Workers	dermal	Long term exposure - systemic effects		1,1 mg/kg	
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	General population	inhalation	Long term exposure - systemic effects		0,97 mg/m3	
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	General population	dermal	Long term exposure - systemic effects		0,56 mg/kg	
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	General population	oral	Long term exposure - systemic effects		0,56 mg/kg	
Benzyl alcohol 100-51-6	General population	oral	Acute/short term exposure - systemic effects		20 mg/kg	no potential for bioaccumulation
Benzyl alcohol 100-51-6	General population	oral	Long term exposure - systemic effects		4 mg/kg	no potential for bioaccumulation
Benzyl alcohol 100-51-6	Workers	inhalation	Acute/short term exposure - systemic effects		110 mg/m3	no potential for bioaccumulation
Benzyl alcohol 100-51-6	Workers	inhalation	Long term exposure - systemic effects		22 mg/m3	no potential for bioaccumulation
Benzyl alcohol 100-51-6	General population	inhalation	Acute/short term exposure - systemic effects		27 mg/m3	no potential for bioaccumulation
Benzyl alcohol 100-51-6	General population	inhalation	Long term exposure - systemic effects		5,4 mg/m3	no potential for bioaccumulation
Benzyl alcohol 100-51-6	Workers	dermal	Acute/short term exposure - systemic effects		40 mg/kg	no potential for bioaccumulation
Benzyl alcohol 100-51-6	Workers	dermal	Long term exposure - systemic effects		8 mg/kg	no potential for bioaccumulation
Benzyl alcohol 100-51-6	General population	dermal	Acute/short term exposure - systemic effects		20 mg/kg	no potential for bioaccumulation
Benzyl alcohol 100-51-6	General population	dermal	Long term exposure - systemic effects		4 mg/kg	no potential for bioaccumulation
Benzyl alcohol	Workers	dermal	Acute/short term			no potential for

100-51-6			exposure - local effects			bioaccumulation
Benzyl alcohol 100-51-6	Workers	dermal	Long term exposure - local effects			no potential for bioaccumulation
Benzyl alcohol 100-51-6	General population	dermal	Acute/short term exposure - local effects			no potential for bioaccumulation
Benzyl alcohol 100-51-6	General population	dermal	Long term exposure - local effects			no potential for bioaccumulation
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Workers	inhalation	Long term exposure - systemic effects		0,2 mg/m3	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Workers	inhalation	Acute/short term exposure - systemic effects		2 mg/m3	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Workers	dermal	Long term exposure - systemic effects		2 mg/kg	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Workers	dermal	Acute/short term exposure - systemic effects		6 mg/kg	
2-Methylpentane-1,5-diamine 15520-10-2	Workers	inhalation	Long term exposure - local effects		0,25 mg/m3	
2-Methylpentane-1,5-diamine 15520-10-2	Workers	inhalation	Acute/short term exposure - local effects		0,5 mg/m3	
2-Methylpentane-1,5-diamine 15520-10-2	Workers	dermal	Long term exposure - systemic effects		1,5 mg/kg	
2-Methylpentane-1,5-diamine 15520-10-2	General population	inhalation	Long term exposure - local effects		0,125 mg/m3	
2-Methylpentane-1,5-diamine 15520-10-2	General population	inhalation	Acute/short term exposure - local effects		0,25 mg/m3	
2-Methylpentane-1,5-diamine 15520-10-2	General population	dermal	Long term exposure - local effects			
2-Methylpentane-1,5-diamine 15520-10-2	General population	oral	Long term exposure - systemic effects		0,25 mg/kg	
2-Methylpentane-1,5-diamine 15520-10-2	Workers	dermal	Long term exposure - local effects			
2-Methylpentane-1,5-diamine 15520-10-2	Workers	dermal	Acute/short term exposure - local effects			
2-Methylpentane-1,5-diamine 15520-10-2	General population	dermal	Acute/short term exposure - local effects			
Salicylic acid 69-72-7	Workers	inhalation	Long term exposure - systemic effects		4,48 mg/m3	
Salicylic acid 69-72-7	Workers	dermal	Long term exposure - systemic effects		1,06 mg/kg	
Salicylic acid 69-72-7	General population	inhalation	Long term exposure - systemic effects		0,79 mg/m3	
Salicylic acid 69-72-7	General population	dermal	Long term exposure - systemic effects		0,378 mg/kg	
Salicylic acid 69-72-7	General population	oral	Long term exposure - systemic effects		0,227 mg/kg	
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Workers	inhalation	Long term exposure - systemic effects		0,53 mg/m3	
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Workers	inhalation	Acute/short term exposure - systemic effects		2,1 mg/m3	
2,4,6-Tris(dimethylaminomethyl)phenol	Workers	dermal	Long term		0,15 mg/kg	

90-72-2			exposure - systemic effects			
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Workers	dermal	Acute/short term exposure - systemic effects		0,6 mg/kg	
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	inhalation	Long term exposure - systemic effects		0,13 mg/m3	
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	inhalation	Acute/short term exposure - systemic effects		0,13 mg/m3	
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	dermal	Long term exposure - systemic effects		0,075 mg/kg	
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	dermal	Acute/short term exposure - systemic effects		0,075 mg/kg	
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	oral	Long term exposure - systemic effects		0,075 mg/kg	
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Workers	inhalation	Acute/short term exposure - local effects			
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Workers	inhalation	Long term exposure - local effects			
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Workers	dermal	Acute/short term exposure - local effects			
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	Workers	dermal	Long term exposure - local effects			
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	inhalation	Acute/short term exposure - local effects			
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	inhalation	Long term exposure - local effects			
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	dermal	Acute/short term exposure - local effects			
2,4,6-Tris(dimethylaminomethyl)phenol 90-72-2	General population	dermal	Long term exposure - local effects			
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	inhalation	Long term exposure - systemic effects		130 mg/m3	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	inhalation	Acute/short term exposure - local effects		5,36 mg/m3	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	inhalation	Long term exposure - systemic effects		26 mg/m3	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	oral	Long term exposure - systemic effects		4 mg/kg	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	inhalation	Acute/short term exposure - local effects		4 mg/m3	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	inhalation	Long term exposure - local effects		0,6 mg/m3	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	inhalation	Long term exposure - local effects		0,1 mg/m3	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	inhalation	Acute/short term exposure - systemic effects		26400 mg/m3	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	dermal	Long term exposure - local effects			
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	dermal	Acute/short term exposure - local effects			

N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	dermal	Long term exposure - local effects			
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	dermal	Acute/short term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	Workers	inhalation	Long term exposure - systemic effects		0,54 mg/m3	
3,6-diazaoctanethylenediamine 112-24-3	General population	inhalation	Long term exposure - systemic effects		0,096 mg/m3	
3,6-diazaoctanethylenediamine 112-24-3	General population	oral	Long term exposure - systemic effects		0,14 mg/kg	
3,6-diazaoctanethylenediamine 112-24-3	Workers	inhalation	Acute/short term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	Workers	inhalation	Long term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	Workers	dermal	Acute/short term exposure - systemic effects			
3,6-diazaoctanethylenediamine 112-24-3	Workers	dermal	Acute/short term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	Workers	dermal	Long term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	Workers	dermal	Long term exposure - systemic effects			
3,6-diazaoctanethylenediamine 112-24-3	General population	inhalation	Acute/short term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	General population	inhalation	Long term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	General population	oral	Acute/short term exposure - systemic effects			
3,6-diazaoctanethylenediamine 112-24-3	General population	dermal	Acute/short term exposure - systemic effects			
3,6-diazaoctanethylenediamine 112-24-3	General population	dermal	Acute/short term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	General population	dermal	Long term exposure - local effects			
3,6-diazaoctanethylenediamine 112-24-3	General population	dermal	Long term exposure - systemic effects			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Workers	inhalation	Long term exposure - systemic effects		0,13 mg/m3	
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Workers	dermal	Long term exposure - systemic effects		0,053 mg/kg	
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Workers	inhalation	Long term exposure - local effects			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Workers	inhalation	Acute/short term exposure - local effects			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Workers	dermal	Long term exposure - local effects			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Workers	dermal	Acute/short term exposure - local effects			

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; >= 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; >= 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	Gray / Grey
Odor	Amine
Physical state	solid
Solidification temperature	Not applicable, Product is a solid
Initial boiling point	> 200 °C (> 392 °F)
Flammability	The product is not flammable.
Explosive limits	Not applicable, Product is a solid
Flash point	> 101 °C (> 213.8 °F)
Auto-ignition temperature	Not applicable, Product is a solid
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 %)	9 - 12
Viscosity (kinematic)	Not applicable, Product is a solid
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Insoluble
Partition coefficient: n-octanol/water	Not applicable Mixture
Vapour pressure	0,02 hPa

(20 °C (68 °F))	
Density	2,1 g/cm3 None
(20 °C (68 °F))	
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.
Acids.
Reaction with strong acids.
Strong bases.

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.
Rapid polymerisation may generate excessive heat and pressure.
May produce fumes when heated to decomposition. Fumes may contain carbon monoxide and other toxic fumes.

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.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Isophorone diamine 2855-13-2	Acute toxicity estimate (ATE)	1.030 mg/kg		Expert judgement
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
benzyl alcohol 100-51-6	Acute toxicity estimate (ATE)	1.200 mg/kg		Expert judgement
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	LD50	300 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
1,5-Pentanediamine, 2-methyl- 15520-10-2	LD50	1.170 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Salicylic acid 69-72-7	LD50	891 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	LD50	1.200 mg/kg	rat	not specified
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LD50	2.295 mg/kg	rat	EPA OPPTS 870.1100 (Acute Oral Toxicity)
3,6-diazaoctanethylenediamine 112-24-3	LD50	1.591 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	LD50	380 mg/kg	rat	EPA OPP 81-1 (Acute Oral Toxicity)

Acute dermal toxicity:

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

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Isophorone diamine 2855-13-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
benzyl alcohol 100-51-6	LD50	> 2.000 mg/kg	rabbit	not specified
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Acute toxicity estimate (ATE)	> 2.000 mg/kg	rabbit	Expert judgement
1,5-Pentanediamine, 2-methyl- 15520-10-2	LD50	1.870 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Salicylic acid 69-72-7	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LD50	> 2.000 mg/kg	rat	EPA OPPTS 870.1200 (Acute Dermal Toxicity)
3,6-diazaoctanethylenediamine 112-24-3	LD50	1.465 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	LD50	2.110 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.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
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	dust/mist			Expert judgement
benzyl alcohol 100-51-6	LC50	> 5,4 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
1,5-Pentanediamine, 2-methyl- 15520-10-2	Acute toxicity estimate (ATE)	1,225 mg/l	dust/mist	4 h		Expert judgement
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LC50	1,49 - 2,44 mg/l	dust/mist	4 h	rat	EPA OPPTS 870.1300 (Acute inhalation toxicity)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Acute toxicity estimate (ATE)	1,49 mg/l	dust/mist			Expert judgement

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
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	irritating or corrosive		Human, EpiDermTM SIT (EPI-200), Reconstructed Human Epidermis (RHE)	OECD Guideline 439 (In Vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	not corrosive		Human, in vitro skin model	OECD Guideline 431 (In Vitro Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method)
benzyl alcohol 100-51-6	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Category 1C (corrosive)		Corrositex Biobarrier Membrane (reconstituted collagen matrix)	OECD Guideline 435 (In Vitro Membrane Barrier Test Method for Skin Corrosion)
1,5-Pentanediamine, 2-methyl- 15520-10-2	highly corrosive	3 min	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Salicylic acid 69-72-7	slightly irritating		rabbit	not specified
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	corrosive	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	Sub-Category 1C (corrosive)		Corrositex Biobarrier Membrane (reconstituted collagen matrix)	OECD Guideline 435 (In Vitro Membrane Barrier Test Method for Skin Corrosion)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	mildly irritating	4 h	rabbit	EPA OPPTS 870.2500 (Acute Dermal Irritation)

3,6-diazaoctanethylenediamine 112-24-3	corrosive		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	corrosive	2,75 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**
Isophorone diamine 2855-13-2	corrosive		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	Category 1 (irreversible effects on the eye)		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
benzyl alcohol 100-51-6	irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Salicylic acid 69-72-7	highly irritating		rabbit	Draize Test
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Category 1 (irreversible effects on the eye)		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Category 1 (irreversible effects on the eye)		rabbit	not specified

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
Isophorone diamine 2855-13-2	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sensitising	Buehler test	guinea pig	Buehler test
Salicylic acid 69-72-7	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	not sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Sub-Category 1A (sensitising)	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
3,6-diazaoctanethylenediamine 112-24-3	sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to 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.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Isophorone diamine 2855-13-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
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)
Salicylic acid 69-72-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Salicylic acid 69-72-7	negative	in vitro mammalian chromosome aberration test	with and without		equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Salicylic acid 69-72-7	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
3,6-diazaoctanethylenediamine 112-24-3	positive	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
3,6-diazaoctanethylenediamine 112-24-3	negative	DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro	with and without		OECD Guideline 482 (Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells In Vitro)

Carcinogenicity

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

Based on available data, the classification criteria are not met.

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)
Salicylic acid 69-72-7	not carcinogenic	oral: feed	2 years 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.

Based on available data, the classification criteria are not met.

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
Salicylic acid 69-72-7	NOAEL P 250 mg/kg	three-generation study	oral: feed	rat	equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction 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.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
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)
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)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	NOAEL 15 mg/kg	oral: gavage	28 d daily	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
Salicylic acid 69-72-7	NOAEL 50 mg/kg	oral: feed	2 years daily	rat	not specified
3,6-diazaoctanethylenediamine 112-24-3	LOAEL 50 mg/kg	oral: gavage	26 w daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
3,6-diazaoctanethylenediamine 112-24-3	NOAEL 50 mg/kg	oral: gavage	26 w daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	NOAEL 15 mg/kg	oral: gavage	M: 36 d / F: 48-52 d daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Aspiration hazard:

No data available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

No substance data available.

No data available.

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
Isophorone diamine 2855-13-2	LC50	110 mg/l	96 h	Leuciscus idus	EU Method C.1 (Acute Toxicity for Fish)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	LC50	7,07 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
benzyl alcohol 100-51-6	LC50	460 mg/l	96 h	Pimephales promelas	EPA OPP 72-1 (Fish Acute Toxicity Test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	LC50	96 mg/l	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	LC50	1.825 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Salicylic acid 69-72-7	LC50	1.370 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	LC50	153 mg/l	96 h	Brachydanio rerio (new name: Danio rerio)	ISO 7346-1 (Determination of the Acute Lethal Toxicity of Substances to a Freshwater Fish [Brachydanio rerio Hamilton-Buchanan (Teleostei, Cyprinidae)]
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LC50	168 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
3,6-diazaoctanethylenediamine 112-24-3	LC50	570 mg/l	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	LC50	> 100 mg/l	96 h	Leuciscus idus	DIN 38412-15

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
Isophorone diamine 2855-13-2	EC50	23 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	EC50	7,07 mg/l	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)
Formaldehyde, polymer with	EC50	15,4 mg/l	48 h	Daphnia magna	OECD Guideline 202

benzenamine, hydrogenated 135108-88-2					(Daphnia sp. Acute Immobilisation Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	EC50	19,8 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Salicylic acid 69-72-7	EC50	870 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	EC50	> 100 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	EC50	87,4 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
3,6-diazaoctanethylenediamine 112-24-3	EC50	31 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	EC50	7,07 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic 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**
Isophorone diamine 2855-13-2	NOEC	3 mg/l	21 d	Daphnia magna	OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test)
benzyl alcohol 100-51-6	NOEC	51 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	NOEC	4,16 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Salicylic acid 69-72-7	NOEC	10 mg/l	21 d	Daphnia magna	OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	NOEC	> 1 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	NOEC	4 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
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)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	EC50	4,34 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	NOEC	0,5 mg/l	72 h	Pseudokirchneriella 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)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	EC10	1,2 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	EC50	43,94 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	EC50	> 100 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	NOEC	10 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Salicylic acid 69-72-7	EC50	> 100 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	EC50	46,7 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	NOEC	6,44 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	EC50	8,8 mg/l	96 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	NOEC	3,1 mg/l	96 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
3,6-diazaoctanethylenediamine 112-24-3	EC50	20 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	EC50	> 140 - 200 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	EC10	100 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09

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
Isophorone diamine	EC10	1.120 mg/l	18 h	Pseudomonas putida	DIN 38412, part 8

2855-13-2					(Pseudomonas Zellvermehrungshemm-Test)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	EC50	384 mg/l	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
benzyl alcohol 100-51-6	EC10	658 mg/l	17 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
Salicylic acid 69-72-7	EC50	> 1.000 mg/l	3 h	not specified	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	EC0	27 mg/l	16 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	EC50	435 mg/l	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
3,6-diazaoctanethylenediamine 112-24-3	EC0	137 mg/l	30 min	Pseudomonas putida	DIN 38412, part 27 (Bacterial oxygen consumption test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	EC20	> 1.000 mg/l	3 h	activated sludge, industrial	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

Biodegradability (Screening Tests):
The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Isophorone diamine 2855-13-2	not readily biodegradable.	aerobic	8 %	28 d	EU Method C.4-A (Determination of the "Ready" BiodegradabilityDissolved Organic Carbon (DOC) Die-Away Test)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	not inherently biodegradable	no data	19 %	60 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	not readily biodegradable.	no data	0 - 70 %	74 day	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
benzyl alcohol 100-51-6	readily biodegradable	aerobic	92 - 96 %	14 d	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
1,5-Pentanediamine, 2-methyl- 15520-10-2	readily biodegradable	aerobic	100 %	21 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Salicylic acid 69-72-7	readily biodegradable	aerobic	88,1 %	15 d	EU Method C.4-F (Determination of the "Ready" BiodegradabilityMITI Test)
Salicylic acid 69-72-7	inherently biodegradable	aerobic	100 %	4 d	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	not readily biodegradable.	aerobic	4 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	not readily biodegradable.	aerobic	39 %	28 day	EU Method C.4-A (Determination of the "Ready" BiodegradabilityDissolved Organic Carbon (DOC) Die-Away Test)
3,6-diazaoctanethylenediamine 112-24-3	not inherently biodegradable	aerobic	0 %	28 d	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
3,6-diazaoctanethylenediamine 112-24-3	not readily biodegradable.	aerobic	0 %	162 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	not readily biodegradable.	aerobic	0 %	28 d	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))

No substance data available.

(Bio)degradability (Simulation Tests):
No data available.

12.3. Bioaccumulative potential

Partition Coefficient (octanol/water)
The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	LogPow	Temperature	Method
Isophorone diamine 2855-13-2	0,99	23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Fatty acids, C18 unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine 68082-29-1	10,34		QSAR (Quantitative Structure Activity Relationship)
benzyl alcohol 100-51-6	1,05	20 °C	EU Method A.8 (Partition Coefficient)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	2,68	21 °C	EU Method A.8 (Partition Coefficient)
1,5-Pentanediamine, 2-methyl- 15520-10-2	<= 1	25 °C	other guideline:
Salicylic acid 69-72-7	2,26	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
2,4,6-tris(dimethylaminomethyl)phenol 90-72-2	-0,66	21,5 °C	EPA OPPTS 830.7550 (Partition Coefficient, n-octanol / H2O, Shake Flask Method)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	-1,67		not specified
3,6-diazaoctanethylenediamine 112-24-3	-2,65		OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	2,2	23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

Bioconcentration factor (BCF)
The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	18 - 219	56 d		Cyprinus carpio	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	< 60	60 d	24 °C	Cyprinus carpio	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)

12.4. Mobility in soil

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

Hazardous substances CAS-No.	LogKoc	pH	Method
benzyl alcohol 100-51-6	1,33		QSAR (Quantitative Structure Activity Relationship)

12.5. Results of PBT / vPvB / PMT / vPvM assessment

PBT/vPvB
This mixture does not contain any substances that are assessed to be a PBT or vPvB.
Based on available data, the classification criteria are not met.

PMT/vPvM
This mixture does not contain any substances that are assessed to be a PMT or vPvM.
Based on available data, the classification criteria are not met.

12.6. Endocrine disrupting properties

No substance data available.

No data available.

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 or ID number

ADR	1759
RID	1759
ADN	1759
IMDG	1759
IATA	1759

14.2. UN proper shipping name

ADR	CORROSIVE SOLID, N.O.S. (Isophoronediamine,2-Methylpentane-1,5-diamine)
RID	CORROSIVE SOLID, N.O.S. (Isophoronediamine,2-Methylpentane-1,5-diamine)
ADN	CORROSIVE SOLID, N.O.S. (Isophoronediamine,2-Methylpentane-1,5-diamine)
IMDG	CORROSIVE SOLID, N.O.S. (Isophoronediamine,2-Methylpentane-1,5-diamine)
IATA	Corrosive solid, n.o.s. (Isophoronediamine,2-Methylpentane-1,5-diamine)

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 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 2024/590):	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)	7,48 % Combined A/B
Seveso III (2012/18/EU):	Not applicable

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)
Storage class according to TRGS 510:	8A

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

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:

H301 Toxic if swallowed.
H302 Harmful if swallowed.
H312 Harmful 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.
H335 May cause respiratory irritation.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Abbreviations and acronyms:

ADG(-Code): Australian Dangerous Goods (Code)
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM: American Society for Testing and Materials
ATE: acute toxicity estimate
AS: Australian Standard
AwSV: Ordinance on Installations for the Handling of Substances Hazardous to Water
CAS: Chemical Abstract Service
CLP: Regulation (EC) No 1272/2008
CMR: cancerogenic, mutagenic or reprotoxic
DIN: German Institute for Standardization
ECx: Effective concentration (x% effective level)
ECHA: European Chemicals Agency
EC-Nummer: Substance number in the EU-inventories EINECS/ELINCS
ECTLV: European community threshold limit value
ED:Substance identified as having endocrine disrupting properties
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
EN : European Standard
ENCS: Japanese chemical inventory
EPA: US Environmental Protection Agency
EU: European Union
EU EXPLD1: Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD2: Substance listed in Annex II, Reg (EC) No. 2019/1148
EWC: European Waste Catalogue
GHS: Globally Harmonised System for Classification and Labelling of Chemicals
GLP: Good Laboratory Practice
HSNO: Hazardous Substances and New Organisms
IARC: International Agency for Research of Cancer
IATA: International Air Transport Association
IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization
IMDG-Code: International Maritime Code for Dangerous Goods
IMO: International Maritime Organization
ISO: International Standardization Organisation
LC50: Median lethal concentration
LD50: Median lethal dose
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
n.o.s.: not otherwise specified
NO(A)EC: No (adverse) effect concentration
NO(A)EL: No (adverse) effect level
NZS: New Zealand Standard
OECD: Organisation for Economic Co-operation and Development

OEL: Occupational Exposure Limit
OPPT: US EPA Office of Pollution Prevention and Toxics
OPPTS: US EPA Office of Prevention, Pesticides and Toxic Substances
PBT: Persistent, bioaccumulative, toxic
PMT: Persistent, mobile and toxic
(Q)SAR: (Quantitative) structure–activity relationship
REACH: Regulation (EC) No. 1907/2006
RID: Regulations concerning the International Transport of Dangerous Goods by Rail
SADT: Self Accelerating Decomposition Temperature
SDS: Safety Data Sheet
STOT: Specific Target Organ Toxicity
STOT SE: Specific Target Organ Toxicity - single exposure
STOT RE: Specific Target Organ Toxicity - repeated exposure
SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons
SVHC: Substance of very high concern (REACH Candidate List)
TRGS: German Technical Rules for hazardous substances
UN: United Nations
VOC: Volatile Organic Compound
814.018 VOC Reg CH: Swiss Ordinance 814.018 on the Incentive Tax on Volatile Organic Compounds
vPvB: Very persistent, very bioaccumulative
vPvM: Very persistent and very mobile
VwVwS: Administrative Regulation on Substances Hazardous to Waters
WGK: Water hazard class

Further information:

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