Safety Data Sheet

LOCTITE 3217 known as Loctite 3217 50g Mus 50ML CN

SDS No. : 230545
V001.8
Revision: 29.06.2026
printing date: 29.06.2026

Section 1. Identification of the substance/preparation and of the company/undertaking

Product name: LOCTITE 3217 known as Loctite 3217 50g Mus 50ML CN

Other means of identification: LOCTITE 3217 50ML MUS CH
Product code: IDH915160
Recommended use of the chemical and restrictions on use

Intended use: Ultraviolet adhesive
Manufacturer/Importer/Distributor Representative Company

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Emergency Telephone for Chemical Accidents: FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call: +84 28 71006388

Section 2. Hazards identification

GHS Classification:

Hazard Class	Hazard Category
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitizer	Category 1
Carcinogenicity	Category 2
Chronic hazards to the aquatic environment	Category 2

GHS label elements:

Hazard pictogram:



Signal word: Warning

Hazard statement:	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H351 Suspected of causing cancer. H411 Toxic to aquatic life with long lasting effects.
Precaution:	
Prevention:	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P264 Wash hands thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Response:	P302+P352 IF ON SKIN: Wash with plenty of water. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 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. P362+P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage.
Disposal:	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Section 3. Composition / information on ingredients

Substance or Mixture:
Mixture

Declaration of hazardous chemical:

Hazard component CAS-No.	Content	GHS Classification
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	10- 30 %	Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin Sensitization 1 H317 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	10- 30 %	Skin corrosion/irritation 2 H315 Skin Sensitization 1A H317 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
Trimethylolpropane triacrylate 15625-89-5	10- 30 %	Acute toxicity 5; Oral H303 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin Sensitization 1 H317 Carcinogenicity 2 H351 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	1- 10 %	Skin Sensitization 1 H317 Chronic hazards to the aquatic environment 2 H411
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	1- 10 %	Specific target organ toxicity - repeated exposure 2; Inhalation H373
Talc 14807-96-6	1- 10 %	
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	1- 10 %	Acute toxicity 5; Oral H303 Serious eye damage/eye irritation 2A H319 Skin Sensitization 1A H317 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	1- 10 %	Acute toxicity 5; Dermal H313 Serious eye damage/eye irritation 1 H318 Acute hazards to the aquatic environment 3 H402 Chronic hazards to the aquatic environment 3 H412
2-Hydroxy-2-methylpropiophenone 7473-98-5	1- 10 %	Acute toxicity 4; Ingestion H302 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 3 H412

Tert-butyl perbenzoate 614-45-9	0.1- 1 %	Organic peroxides C H242 Acute toxicity 4; Inhalation H332 Skin corrosion/irritation 2 H315 Skin Sensitization 1 H317 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 3 H412
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	0.1- 1 %	Acute toxicity 5; Dermal H313 Reproductive toxicant. 2 H361 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
Hydroquinone 123-31-9	< 0.1 %	Acute toxicity 4; Oral H302 Serious eye damage/eye irritation 1 H318 Skin Sensitization 1 H317 Germ cell mutagenicity 2 H341 Carcinogenicity 2 H351 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410

Section 4. First aid measures

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

Skin contact: Rinse with running water and soap.
Seek medical advice.

Eye contact: Rinse immediately with plenty of running water (for 10 minutes). Seek medical attention if necessary.

Ingestion: Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.
Seek medical advice.

Indication of immediate medical attention and special treatment needed: See section: Description of first aid measures

Section 5. Fire fighting measures

Suitable extinguishing media: Carbon dioxide, foam, powder

Improper extinguishing media: High pressure waterjet

Specific hazards arising from the chemical:	In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released. Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.
Special protection equipment and precautions for firefighters:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.
Hazardous combustion products:	Formaldehyde Oxides of carbon. Oxides of nitrogen. Irritating vapours. Silicon dioxide
Additional fire fighting advice:	In case of fire, keep containers cool with water spray.

Section 6. Accidental release measures

Personal precautions:	Avoid skin and eye contact.
Environmental precautions:	Do not empty into drains / surface water / ground water.
Clean-up methods:	Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal.

Section 7. Handling and storage

Handling:	Avoid skin and eye contact. Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation. Ventilation will remove any ozone that may be produced by the ultra violet lamp
Storage:	Store in tightly closed containers. In a cool/well-ventilated area. Keep away from sources of ignition.

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	**Value type**	Time Weighted Average (TWA):
	mg/m³	10
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	**Value type**	Time Weighted Average (TWA):
	mg/m³	3
Talc, containing no asbestos fibers, respirable fraction 14807-96-6	**Value type**	Time Weighted Average (TWA):
	mg/m³	2
	Remarks	ACGIH The value is for particulate matter containing no asbestos and <1% crystalline silica.
HYDROQUINONE 123-31-9	**Value type**	Time Weighted Average (TWA):
	mg/m³	1
	Remarks	ACGIH
Hydroquinone; 1,4-Dihydroxybenzene 123-31-9	**Value type**	Short-term exposure limit (STEL):
	mg/m³	1.5
	Remarks	VN OEL
Hydroquinone; 1,4-Dihydroxybenzene 123-31-9	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.5
	Remarks	VN OEL

Respiratory protection:
Use only in well-ventilated areas.
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.

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

Engineering controls:	Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.
General protection and hygiene measures:	The workplace should be equipped with an emergency shower and eye-rinsing facility.
Hygienic measures:	Wash hands before work breaks and after finishing work. Do not eat, drink or smoke while working. Take off contaminated clothing and wash before reuse.

Section 9. Physical and chemical properties

Appearance:	Light yellow, Amber liquid
Odor:	Mild
Odor threshold (CA):	No data available.
pH:	Not applicable, Product is non-soluble (in water).
Melting point / freezing point:	Not applicable, Product is a liquid
Specific gravity:	1.25
Boiling point:	> 250 °C (> 482 °F)
Flash point:	> 93 °C (> 199.4 °F)
Evaporation rate:	Not available.
Flammability (solid, gas):	No data available.
Lower explosive limit:	No data available.
Upper explosive limit:	No data available.
Vapor pressure: (; 20 °C (68 °F))	< 700 mbar
Vapor density:	> 1
Density:	1.25 g/cm3
Solubility:	No data available.
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	Not available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
VOC content: (2010/75/EC)	< 3 %

Section 10. Stability and reactivity

Reactivity/Incompatible materials:	Reaction with strong acids. Reacts with strong oxidants. Avoid contact with amines. Reaction with strong bases
Chemical stability:	Stable under recommended storage conditions.
Conditions to avoid:	Store away from incompatible materials. Avoid moisture. Danger of decomposition if exposed to heat. Exposure to light.
Hazardous decomposition products:	Irritating organic vapours. carbon oxides. nitrogen oxides

Section 11. Toxicological information

Oral toxicity:	Acute toxicity estimate (ATE) : > 2,000 mg/kg Method: Calculation method

Symptoms of Overexposure**:** EYE: Irritation, conjunctivitis.
SKIN: Redness, inflammation.
SKIN: Rash, Urticaria.

Acute oral toxicity:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 420 (Acute Oral Toxicity)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Trimethylolpropane triacrylate 15625-89-5	Value type	LD50
	Value	3,680 mg/kg
	Species	rat
	Method	not specified
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Value type	LD0
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	Acute toxicity estimate (ATE)
	Value	> 5,000 mg/kg
	Species	
	Method	Expert judgement
Talc 14807-96-6	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Value type	Acute toxicity estimate (ATE)
	Value	2,500 mg/kg
	Species	
	Method	Expert judgement
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Value type	LD50
	Value	8,025 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Value type	LD50
	Value	1,694 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Tert-butyl perbenzoate 614-45-9	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Hydroquinone 123-31-9	Value type	LD50
	Value	367 mg/kg

	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)

Acute inhalative toxicity:

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	LC50
	Value	> 5.01 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	Acute toxicity estimate (ATE)
	Value	> 5.01 mg/l
	Exposure time	
	Species	
	Method	Expert judgement
Talc 14807-96-6	Value type	LC50
	Value	> 2.1 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 403 (Acute Inhalation Toxicity)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Value type	LC50
	Value	> 5.3 mg/l
	Exposure time	4 h
	Species	rat
	Method	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
Tert-butyl perbenzoate 614-45-9	Value type	LC50
	Value	> 1.01 - < 4.9 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)
Tert-butyl perbenzoate 614-45-9	Value type	LC50
	Value	5 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)

Acute dermal toxicity:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
Trimethylolpropane triacrylate 15625-89-5	Value type	LD50
	Value	7,050 mg/kg
	Species	rabbit
	Method	not specified
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Value type	LD0
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rabbit
	Method	not specified

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	Acute toxicity estimate (ATE)
	Value	> 5,000 mg/kg
	Species	
	Method	Expert judgement
Talc 14807-96-6	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	EPA OPP 81-2 (Acute Dermal Toxicity)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Value type	LD50
	Value	4,250 mg/kg
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Value type	LD50
	Value	6,929 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Tert-butyl perbenzoate 614-45-9	Value type	LD0
	Value	2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Tert-butyl perbenzoate 614-45-9	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Value type	Acute toxicity estimate (ATE)
	Value	2,500 mg/kg
	Species	
	Method	Expert judgement
Hydroquinone 123-31-9	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	irritating
	Exposure time	
	Species	
	Method	Weight of evidence
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	irritating
	Exposure time	4 h
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Talc 14807-96-6	Result	slightly irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
[3-(2,3-	Result	not irritating

Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Exposure time	24 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Result	not irritating
	Exposure time	24 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Tert-butyl perbenzoate 614-45-9	Result	irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Hydroquinone 123-31-9	Result	not irritating
	Exposure time	24 h
	Species	rabbit
	Method	Weight of evidence

Serious eye damage/irritation:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	irritating
	Exposure time	
	Species	
	Method	Weight of evidence
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Talc 14807-96-6	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Result	irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Result	corrosive
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Tert-butyl perbenzoate 614-45-9	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Hydroquinone 123-31-9	Result	corrosive
	Exposure time	
	Species	human
	Method	Weight of evidence

Respiratory or skin sensitization:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	Sub-Category 1A (sensitising)
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	not sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
Talc 14807-96-6	Result	not sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Result	not sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Result	not sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
Tert-butyl perbenzoate 614-45-9	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Result	not sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
Hydroquinone 123-31-9	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
Hydroquinone 123-31-9	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	mouse
	Method	not specified
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	positive
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 486 (Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	
	Method	OECD Guideline 490 (In Vitro Mammalian Cell Gene Mutation Tests Using the Thymidine Kinase Gene)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)
Talc 14807-96-6	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Talc 14807-96-6	Result	negative
	Type of study / Route of administration	in vitro mammalian cell transformation assay
	Metabolic activation / Exposure time	without
	Method	equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Talc 14807-96-6	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test)
[3-(2,3-Epoxypropoxy)propyl]trimethox	Result	A mutagenic potential can not be excluded.
	Type of study / Route of administration	mammalian cell gene mutation assay

ysilane 2530-83-8	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Result	positive
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 489 (In Vivo Mammalian Alkaline Comet Assay)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 488 (In Vivo Transgenic Cell Gene Mutation Assays)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Result	negative
	Type of study / Route of administration	oral: unspecified
	Metabolic activation / Exposure time	
	Species	hamster, Chinese
	Method	EU Method B.12 (Mutagenicity
Hydroquinone 123-31-9	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Hydroquinone 123-31-9	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Hydroquinone 123-31-9	Result	positive
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Hydroquinone 123-31-9	Result	positive
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
	Method	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Hydroquinone 123-31-9	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	equivalent or similar to OECD Guideline 478 (Genetic

		Toxicology: Rodent Dominant Lethal Test)
Hydroquinone 123-31-9	Result	positive
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
	Method	equivalent or similar to OECD Guideline 483 (Mammalian Spermatogonial Chromosome Aberration Test)

Repeated dose toxicity:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	NOAEL=50 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	14 wdaily
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	NOAEL=250 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	13 wdaily
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	NOAEL=491.5 mg/kg
	Route of application	oral: feed
	Exposure time / Frequency of treatment	6 monthsdaily
	Species	rat
	Method	not specified
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	NOAEL=0.01 mg/l
	Route of application	inhalation: dust
	Exposure time / Frequency of treatment	12 months6 h/d, 5 d/wk
	Species	rat
	Method	not specified
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Result	NOAEL=0.01 mg/l
	Route of application	inhalation: dust
	Exposure time / Frequency of treatment	12 months6 h/d, 5 d/wk
	Species	monkey
	Method	not specified
Talc 14807-96-6	Result	NOAEL=100 mg/kg
	Route of application	oral: feed
	Exposure time / Frequency of treatment	101 d7 d/w
	Species	rat
	Method	equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Result	NOAEL=1,000 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	28 d5 d / week
	Species	rat
	Method	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Result	NOAEL=0.225 mg/l
	Route of application	inhalation: aerosol
	Exposure time / Frequency of treatment	14 d6 h / d, 4/5 exposures/week
	Species	rat
	Method	equivalent or similar to OECD Guideline 412 (Repeated Dose Inhalation Toxicity: 28/14-Day)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Result	NOAEL=50 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	92-93 ddaily
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Result	NOAEL=50 mg/kg
	Route of application	oral: unspecified
	Exposure time / Frequency of treatment	28 ddaily
	Species	rat
	Method	EU Method B.7 (Repeated Dose (28 Days) Toxicity (Oral))
Hydroquinone 123-31-9	Result	NOAEL=50 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	13 w5 d/w
	Species	rat
	Method	not specified
Hydroquinone 123-31-9	Result	NOAEL=73.9 mg/kg
	Route of application	dermal
	Exposure time / Frequency of treatment	13 w6 h/d, 5 d/w
	Species	rat

	Method	equivalent or similar to OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

Section 12. Ecological information

General ecological information: Do not empty into drains / surface water / ground water.

Ecotoxicity: H411 Toxic to aquatic life with long lasting effects.

Toxicity:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	LC50
	Value	1.75 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	EC50
	Value	1.7 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	EC50
	Value	> 11 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus capricornutum
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	4.2 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus capricornutum
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	IC50
	Value	> 100 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge, industrial
	Method	other guideline:
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	LC50
	Value	5.7 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Leuciscus idus
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	EC50
	Value	2.55 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	EC50
	Value	1.8 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Reaction mass bisphenol-F-(epichlorhydrin)	Value type	IC50
	Value	> 100 mg/l

9003-36-5	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge, industrial
	Method	other guideline:
Trimethylolpropane triacrylate 15625-89-5	Value type	LC50
	Value	0.87 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Danio rerio (reported as Brachydanio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Trimethylolpropane triacrylate 15625-89-5	Value type	EC50
	Value	19.9 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	EU Method C.2 (Acute Toxicity for Daphnia)
Trimethylolpropane triacrylate 15625-89-5	Value type	EC50
	Value	18.8 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	EU Method C.3 (Algal Inhibition test)
	Value type	EC10
	Value	1.9 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	EU Method C.3 (Algal Inhibition test)
Trimethylolpropane triacrylate 15625-89-5	Value type	EC20
	Value	625 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	activated sludge, domestic
	Method	ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Value type	LL50
	Value	> 100 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Cyprinus carpio
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
	Value type	NOEC
	Value	0.25 mg/l
	Acute Toxicity Study	Fish
	Exposure time	33 d
	Species	Pimephales promelas
	Method	OECD Guideline 210 (fish early life stage toxicity test)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Value type	EC50
	Value	105 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	1.2 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	LC50
	Value	> 10,000 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h

	Species	Brachydanio rerio (new name: Danio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	EC50
	Value	> 1,000 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	24 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	EC50
	Value	> 173.1 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	173.1 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica 68909-20-6	Value type	EC50
	Value	> 2,500 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge of a predominantly domestic sewage
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Value type	LC50
	Value	8.9 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Cyprinus carpio
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Value type	EC50
	Value	18 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Value type	NOEC
	Value	6.6 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC50
	Value	> 36 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Value type	LC50
	Value	55 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Cyprinus carpio
	Method	EU Method C.1 (Acute Toxicity for Fish)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Value type	EC50
	Value	324 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Simocephalus vetulus
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Value type	EC50
	Value	350 mg/l
	Acute Toxicity Study	Algae
	Exposure time	96 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)

	Value type	NOEC
	Value	130 mg/l
	Acute Toxicity Study	Algae
	Exposure time	96 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge of a predominantly domestic sewage
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Value type	LC50
	Value	160 mg/l
	Acute Toxicity Study	Fish
	Exposure time	48 h
	Species	Leuciscus idus
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Value type	EC50
	Value	> 119 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Value type	EC50
	Value	1.95 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	0.194 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Value type	EC50
	Value	3 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Tert-butyl perbenzoate 614-45-9	Value type	LC50
	Value	1.6 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Brachydanio rerio (new name: Danio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Tert-butyl perbenzoate 614-45-9	Value type	EC50
	Value	11 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Tert-butyl perbenzoate 614-45-9	Value type	NOEC
	Value	0.72 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC50
	Value	0.8 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Tert-butyl perbenzoate 614-45-9	Value type	EC10
	Value	6 mg/l

	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	activated sludge of a predominantly domestic sewage
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Value type	LC50
	Value	> 0.142 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Danio rerio (reported as Brachydanio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Value type	EC50
	Value	0.5 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Value type	IC50
	Value	> 5.9 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	not specified
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Hydroquinone 123-31-9	Value type	LC50
	Value	0.638 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
	Value type	NOEC
	Value	0.066 mg/l
	Acute Toxicity Study	Fish
	Exposure time	32 d
	Species	Pimephales promelas
	Method	OECD Guideline 210 (fish early life stage toxicity test)
Hydroquinone 123-31-9	Value type	EC50
	Value	0.134 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydroquinone 123-31-9	Value type	EC50
	Value	0.330 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	0.019 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroquinone 123-31-9	Value type	EC50
	Value	71 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	2 h
	Species	activated sludge of a predominantly domestic sewage
	Method	other guideline:

Persistence and degradability:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	5 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	0 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Trimethylolpropane triacrylate 15625-89-5	Result	readily biodegradable
	Route of application	aerobic
	Degradability	> 82 - 90 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
	Result	inherently biodegradable
	Route of application	aerobic
	Degradability	> 70 %
	Method	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	42 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Acrylic acid, reaction products with dipentaerythritol 1384855-91-7	Result	
	Route of application	aerobic
	Degradability	0 - 2 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	37 %
	Method	EU Method C.4-A (Determination of the "Ready" BiodegradabilityDissolved Organic Carbon (DOC) Die-Away Test)
2-Hydroxy-2-methylpropiophenone 7473-98-5	Result	readily biodegradable
	Route of application	aerobic
	Degradability	90 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
Tert-butyl perbenzoate 614-45-9	Result	readily biodegradable
	Route of application	aerobic
	Degradability	70 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	Result	not readily biodegradable.
	Route of application	not specified
	Degradability	3 %
	Method	Directive 84/449/EEC, C.5
Hydroquinone 123-31-9	Result	readily biodegradable
	Route of application	aerobic
	Degradability	> 75 - 81 %
	Method	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)

Bioaccumulative potential / Mobility in soil:

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	LogPow	3.242
	Temperature	25 °C
	Method	EU Method A.8 (Partition Coefficient)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	LogPow	2.7 - 3.6
	Temperature	
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Trimethylolpropane triacrylate 15625-89-5	LogPow	4.35
	Temperature	20 °C
	Method	QSAR (Quantitative Structure Activity Relationship)
4,4'-isopropylidenediphenol-, polymer with (chloromethyl)oxirane, acrylate 55818-57-0	LogPow	1.6 - 3.8
	Temperature	23 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Talc 14807-96-6	LogPow	-9.4
	Temperature	25 °C
	Method	QSAR (Quantitative Structure Activity Relationship)
Acrylic acid, reaction products with dipentaerythritol	LogPow	3.44
	Temperature	

1384855-91-7	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane 2530-83-8	LogPow	0.5
	Temperature	20 °C
	Method	QSAR (Quantitative Structure Activity Relationship)
2-Hydroxy-2-methylpropiophenone 7473-98-5	LogPow	1.62
	Temperature	25 °C
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Tert-butyl perbenzoate 614-45-9	LogPow	3.00
	Temperature	25 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
2-benzyl-2-dimethylamino-4-morpholinobutyrophenone 119313-12-1	LogPow	2.91
	Temperature	25 °C
	Method	other guideline:
Hydroquinone 123-31-9	LogPow	0.59
	Temperature	
	Method	EU Method A.8 (Partition Coefficient)

Section 13. Disposal considerations

Product

Method of disposal: Dispose of in accordance with local and national regulations.

Packaging

Disposal of uncleaned packages: Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Section 14. Transport information

Road transport ADR:

Class:	9
Packing group:	III
Classification code:	M6
Hazard ident. number:	90
UN no.:	3082
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin,Bisphenol-F Epichlorohydrin resin)

Railroad transport RID:

Class:	9
Packing group:	III
Classification code:	M6
Hazard ident. number:	90
UN no.:	3082
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin,Bisphenol-F Epichlorohydrin resin)

Inland water transport ADN:

Class:	9
Packing group:	III
Classification code:	M6
Hazard ident. number:	90
UN no.:	3082
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin,Bisphenol-F Epichlorohydrin resin)

Marine transport IMDG:

Class:	9
Packing group:	III
UN no.:	3082
Label:	9
EmS:	F-A ,S-F
Seawater pollutant:	Marine pollutant
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin,Bisphenol-F Epichlorohydrin resin)

Air transport IATA:

Class:	9
Packing group:	III
Packaging instructions (passenger):	964
Packaging instructions (cargo):	964
UN no.:	3082
Label:	9
Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol-A Epichlorhydrin resin,Bisphenol-F Epichlorohydrin resin)

Further information for transport:

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.

Section 15. Regulatory information

Regulatory Information: This Safety Data Sheet has been generated based on

LAW ON CHEMICALS No. 69/2025/QH15, issued on June 14, 2025;

Decree No. 24/2026/NĐ-CP, issued on January 17, 2026, ON THE LISTS OF CHEMICALS GOVERNED BY THE LAW ON CHEMICALS;

Decree No. 25/2026/NĐ-CP, issued on January 17, 2026, DETAILED REGULATIONS AND MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF CERTAIN ARTICLES OF THE LAW ON CHEMICALS CONCERNING THE DEVELOPMENT OF THE CHEMICAL INDUSTRY AND CHEMICAL SAFETY AND SECURITY;

Decree No. 26/2026/NĐ-CP, issued on January 17, 2026, DETAILED REGULATIONS AND GUIDELINES FOR IMPLEMENTING CERTAIN ARTICLES OF THE LAW ON CHEMICALS REGARDING THE MANAGEMENT OF CHEMICAL ACTIVITIES AND HAZARDOUS CHEMICALS IN PRODUCTS AND GOODS;

Circular No. 01/2026/TT-BCT, issued on January 17, 2026, DETAILED REGULATIONS AND GUIDELINES FOR IMPLEMENTING CERTAIN ARTICLES OF THE LAW ON CHEMICALS AND GOVERNMENT DECREE NO. 26/2026/ND-CP DETAILING AND GUIDING THE IMPLEMENTATION OF CERTAIN ARTICLES OF THE LAW ON CHEMICALS REGARDING THE MANAGEMENT OF CHEMICAL ACTIVITIES AND HAZARDOUS CHEMICALS IN PRODUCTS AND GOODS;

Circular No. 02/2026/TT-BCT, issued on January 17, 2026, REGULATIONS ON SOME IMPLEMENTATION MEASURES OF THE LAW ON CHEMICALS AND GOVERNMENT DECREE NO. 25/2026/ND-CP DETAILING AND PROVIDING MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF SOME ARTICLES OF THE LAW ON CHEMICALS CONCERNING THE DEVELOPMENT OF THE CHEMICAL INDUSTRY AND CHEMICAL SAFETY AND SECURITY;

Decree No. 161/2024/ND-CP, issued on December 18, 2024, ON LIST OF DANGEROUS GOODS, TRANSPORT OF DANGEROUS GOODS AND PROCEDURES FOR ISSUANCE OF LICENSES OR CERTIFICATES OF COMPLETION OF TRAINING PROGRAMS FOR DRIVERS OR ESCORTS TRANSPORTING DANGEROUS GOODS BY ROAD;

Decree No. 34/2024/NĐ-CP, issued on March 31, 2024, ON LIST OF DANGEROUS GOODS, TRANSPORT OF DANGEROUS GOODS BY INLAND WATERCRAFT;

Decree No. 33/2024/NĐ-CP, issued on March 27, 2024, IMPLEMENTING THE CONVENTION ON THE PROHIBITION OF THE DEVELOPMENT, PRODUCTION, STOCKPILING AND USE OF CHEMICAL WEAPONS AND ON THEIR;

Decree No. 37/2026/NĐ-CP, issued on January 23, 2026, ELABORATING CERTAIN ARTICLES AND MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF THE LAW ON PRODUCT AND GOODS QUALITY.

If other regulatory information applies that is not already provided or updated elsewhere in this Safety Data Sheet, then it is described in this subsection.

Global inventory status:

Regulatory list	Notification
TCSI	yes
TSCA	yes
DSL	yes
ENCS (JP)	yes
ISHL (JP)	yes
KECI (KR)	yes
IECSC	yes

Section 16. Other information

Disclaimer:

This Safety Data Sheet has been generated based on Law On Chemicals No. 69/2025/QH15; Decree No. 24/2026/NĐ-CP; Decree No. 25/2026/NĐ-CP; Decree No. 26/2026/NĐ-CP; Circular No. 01/2026/TT-BCT; Circular No. 02/2026/TT-BCT; Decree No. 161/2024/ND-CP; Decree No. 34/2024/NĐ-CP; Decree No. 33/2024/NĐ-CP, and Decree No. 37/2026/NĐ-CP.

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

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).