

Safety data sheet

according to Directive (EC) no. 1907/2006 and Directive (EU)
no. 453/2010 (REACH)



Trading name: Loctite 243 Screw locking

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1. Material/preparation and company designation

1.1 Product identifier

Trading name: Loctite 243 Screw locking

Item number: 2362940

Type: Loctite 243

Recommended purpose: Medium strength bolt lock, suitable for all metal thread connections (e.g. stainless steel, aluminium, galvanised surfaces). Prevents loosening due to vibrations.

1.2 Relevant identified uses of the substance or mixture and uses we would not recommend:

Intended use: Adhesive

1.3 Manufacturer/supplier

OBO Bettermann Holding GmbH & Co. KG

P.O. Box 1120

58694 Menden

Germany

Division providing information

Customer Service

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1.4 Emergency telephone number

REACH Registration of Chemicals GmbH

Tel.: +49 (0)700 2411 2112 (OBO)

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2. Possible risks

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.

Specific target organ toxicity - single exposure Category 3

H335 May cause respiratory irritation.

Target organ: respiratory tract irritation

Chronic hazards to the aquatic environment Category 2

H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements (CLP)

Hazard pictograms



Contains Tetramethylene dimethacrylate
maleic acid
Acetic acid, 2-phenylhydrazide

Signal word Warning

Hazard statements

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

**** **For consumer use only: P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P501 Dispose of contents/container in accordance with national regulation.**

Precautionary statements: Prevention

P261 Avoid breathing vapors.
P273 Avoid release to the environment.
P280 Wear protective gloves.

Precautionary statements: Response

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

2.3 Other hazards

None if used properly.

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

3. Composition/details of component parts

3.1 Substances

3.2 Mixtures

General chemical description: Anaerobic adhesive

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

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Tetramethylene dimethacrylate 2082-81-7	218-218-1 01- 2119967415-30	25 - 50 %	Skin Sens. 1B H317 Skin Irrit. 2 H315 Eye Irrit. 2 H319 STOT SE 3 H335
2,4,6-Triallyloxy-s-triazine 101-37-1	202-936-7 01- 2119489756-17	5 - < 10 %	Acute Tox. 4; Oral H302 Aquatic Chronic 2 H411

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
2-[[[2,2-bis[[[(1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl diacrylate 94108-97-1	302-434-9	1 - < 5 %	Eye Irrit. 2 H319 Aquatic Chronic 2 H411
Fatty acid amide 126098-16-6	484-050-2 01-0000020228-74	0,25 - < 2,5 %	Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M Faktor (Akut Aquat Tox): 10 M Faktor (Chron Aquat Tox): 10
Cumene hydroperoxide 80-15-9	201-254-7 01-2119475796-19	0,1 - < 1 %	STOT RE 2 Skin Corr. 1B H314 Acute Tox. 2; Inhalation H330 Aquatic Chronic 2 H411 Acute Tox. 4; Oral H302 Acute Tox. 4; Dermal H312 Org. Perox. E H242 STOT SE 3 H335
Acetic acid, 2-phenylhydrazide 114-83-0	204-055-3	0,1 - < 1 %	Acute Tox. 3; Oral H301 Skin Irrit. 2 H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 STOT SE 3; Inhalation H335 Carc. 2 H351
maleic acid 110-16-7	203-742-5 01-2119488705-25	0,1 - < 1 %	Acute Tox. 4; Dermal H312 Acute Tox. 4; Oral H302 Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315 Skin Sens. 1 H317
1,4-Naphthalenedione 130-15-4	204-977-6	0,01 - < 0,1 %	Acute Tox. 3; Oral H301 Skin Corr. 1C H314 Skin Sens. 1 H317 Eye Dam. 1 H318 Acute Tox. 1; Inhalation H330 STOT SE 3 H335 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M Faktor (Akut Aquat Tox): 10

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

4. First aid measures

4.1 Description of the 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.

EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

4.3 Indication of any immediate medical attention and special treatment needed

See section: Description of first aid measures

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agent:

water, carbon dioxide, foam, powder

Unsuitable extinguishing agents 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 (NO_x) 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.

6. Measures in the case of unintentional release

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

Keep away from sources of ignition.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Dispose of contaminated material as waste according to Section 13.

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

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

6.4 Reference to other sections

See advice in section 8

7. Handling and storage

7.1 Precautions for safe handling

Avoid skin and eye contact.

See advice in section 8

Hygiene measures:

Good industrial hygiene practices should be observed.

Do not eat, drink or smoke while working.

Wash hands before work breaks and after finishing work.

7.2 Conditions for safe storage, including any incompatibilities

Ensure good ventilation/extraction.

Refer to Technical Data Sheet

7.3 Specific end use(s)

Adhesive

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
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9		10	Exposure limit(s):	2	TRGS 900
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9		4	Exposure limit(s):	If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9			Short Term Exposure Classification:	Category II: substances with a resorptive effect	TRGS 900
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9		1,25	Exposure limit(s)::		TRGS 900
Ethene, homopolymer 9002-88-4			Short Term Exposure Classification:	Category II: substances with a resorptive effect	TRGS 900
Ethene, homopolymer 9002-88-4		1,25	Exposure limit(s)::		TRGS 900
Ethene, homopolymer 9002-88-4		10	Exposure limit(s)::		TRGS 900

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	andere	
Tetramethylene dimethacrylate 2082-81-7	aqua (freshwater)		0,043 mg/l				
Tetramethylene dimethacrylate 2082-81-7	aqua (freshwater)		0,004 mg/l				

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	andere	
Tetramethylene dimethacrylate 2082-81-7	aqua (intermittent releases)		0,098 mg/l				
Tetramethylene dimethacrylate 2082-81-7	sewage treatment plant (STP)		2 mg/l				
Tetramethylene dimethacrylate 2082-81-7	sediment (freshwater)				3,12 mg/kg		
Tetramethylene dimethacrylate 2082-81-7	sediment (marine water)				0,312 mg/kg		
Tetramethylene dimethacrylate 2082-81-7	Soil				0,573 mg/kg		
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	aqua (freshwater)		0,007 mg/l				
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	aqua (marine water)		0,001 mg/l				
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	freshwater - intermittent		0,07 mg/l				
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	sediment (freshwater)				0,173 mg/kg		
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	sediment (marine water)				0,017 mg/kg		
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	Soil				0,057 mg/kg		
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	sewage treatment plant (STP)		10 mg/l				
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	oral				0,119 mg/kg		
2-[[2,2-Bis[(1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanedioldiacrylate 94108-97-1	aqua (freshwater)		0,0012 mg/l				
2-[[2,2-Bis[(1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanedioldiacrylate 94108-97-1	Soil				0,096 mg/kg		

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	andere	
2-[[2,2-Bis[[[1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanedioldiacrylate 94108-97-1	sediment (marine water)				0,048 mg/kg		
2-[[2,2-Bis[[[1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanedioldiacrylate 94108-97-1	sediment (freshwater)				0,484 mg/kg		
2-[[2,2-Bis[[[1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanedioldiacrylate 94108-97-1	sewage treatment plant (STP)		100 mg/l				
2-[[2,2-Bis[[[1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanedioldiacrylate 94108-97-1	aqua (intermittent releases)		0,012 mg/l				
2-[[2,2-Bis[[[1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanedioldiacrylate 94108-97-1	aqua (marine water)		0,00012 mg/l				
Fatty acid amide 126098-16-6	aqua (freshwater)		0,000146 mg/l				
Fatty acid amide 126098-16-6	aqua (marine water)		0,0146 g/l				
Fatty acid amide 126098-16-6	aqua (intermittent releases)		0,00025 mg/l				
Fatty acid amide 126098-16-6	sediment (marine water)				5,554 mg/kg		
Fatty acid amide 126098-16-6	aqua (freshwater)				55,54 mg/kg		
Fatty acid amide 126098-16-6	Soil				66,576 mg/kg		
Fatty acid amide 126098-16-6	sewage treatment plant (STP)		10 mg/l				
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (freshwater)		0,0031 mg/l				
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (marine water)		0,00031 mg/l				
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (intermittent releases)		0,031 mg/l				
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	Sewage treatment plant		0,35 mg/l				

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	andere	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	sediment (freshwater)				0,023 mg/kg		
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	sediment (marine water)				0,0023 mg/kg		
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	Soil				0,0029 mg/kg		
Maleic acid 110-16-7	aqua (freshwater)		0,1 mg/l				
Maleic acid 110-16-7	aqua (intermittent releases)		0,4281 mg/l				
Maleic acid 110-16-7	sediment (freshwater)				0,334 mg/kg		
Maleic acid 110-16-7	sewage treatment plant (STP)		44,6 mg/l				
Maleic acid 110-16-7	aqua (marine water)		0,01 mg/l				
Maleic acid 110-16-7	sediment (marine water)				0,0334 mg/kg		
Maleic acid 110-16-7	Soil				0,0415 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Tetramethylene dimethacrylate 2082-81-7	Workers	dermal	Long term exposure - systemic effects		4,2 mg/kg	
Tetramethylene dimethacrylate 2082-81-7	Workers	inhalation	Long term exposure - systemic effects		14,5 mg/m ³	
Tetramethylene dimethacrylate 2082-81-7	General population	inhalation	Long term exposure - systemic effects		4,3 mg/m ³	
Tetramethylene dimethacrylate 2082-81-7	General population	dermal	Long term exposure - systemic effects		2,5 mg/kg	
Tetramethylene dimethacrylate 2082-81-7	General population	oral	Long term exposure - systemic effects		2,5 mg/kg	

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	Workers	inhalation	Acute/short term exposure - systemic effects		134,4 mg/m ³	
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	Workers	dermal	Long term exposure - systemic effects		1,5 mg/kg	
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	Workers	inhalation	Long term exposure - systemic effects		2,12 mg/m ³	
2-[[2,2-Bis[[[(1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl]diacrylate 94108-97-1	Workers	Inhalation	Long term exposure - systemic effects		5,88 mg/m ³	
2-[[2,2-Bis[[[(1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl]diacrylate 94108-97-1	Workers	dermal	Long term exposure - systemic effects		1,67 mg/kg	
Fatty acid amide 126098-16-6	General population	oral	Long term exposure - systemic effects		8,3 mg/kg	
Fatty acid amide 126098-16-6	General population	dermal	Long term exposure - systemic effects		8,3 mg/kg	
Fatty acid amide 126098-16-6	Workers	dermal	Long term exposure - systemic effects		14 mg/kg	
Fatty acid amide 126098-16-6	General population	Inhalation	Long term exposure - systemic effects		2,9 mg/m ³	
Fatty acid amide 126098-16-6	Workers	Inhalation	Long term exposure - systemic effects		9,8 mg/m ³	
.alpha.,.alpha.-Dimethylbenzylhydroperoxide 80-15-9	Workers	Inhalation	Long term exposure - systemic effects		6 mg/m ³	
Maleic acid 110-16-7	Workers	dermal	Acute/short term exposure - local effects		0,55 mg/cm ²	
Maleic acid 110-16-7	Workers	dermal	Long term exposure - local effects		0,04 mg/cm ²	
Maleic acid 110-16-7	Workers	dermal	Acute/short term exposure - systemic effects		58 mg/kg	
Maleic acid 110-16-7	Workers	dermal	Long term exposure - systemic effects		3,3 mg/kg	

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Maleic acid 110-16-7	Workers	Inhalation	Acute/short term exposure - local effects		3 mg/m ³	
Maleic acid 110-16-7	Workers	Inhalation	Long term exposure - systemic effects		3 mg/m ³	
Maleic acid 110-16-7	Workers	Inhalation	Long term exposure - local effects		3 mg/m ³	
Maleic acid 110-16-7	Workers	Inhalation	Acute/short term exposure - systemic effects		3 mg/m ³	

Biological Exposure Indices:

None

8.2 Exposure controls**Engineering controls:**

Ensure good ventilation/extraction.

Respiratory protection:

Ensure adequate ventilation.

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

Filter type: A (EN 14387)

Hand protection:

Chemical-resistant protective gloves (EN 374).

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

nitrile rubber (NBR; \geq 0.4 mm thickness)

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

nitrile rubber (NBR; \geq 0.4 mm thickness)

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

Eye protection:

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

Skin protection:

Wear suitable protective clothing.

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

Advices to personal protection equipment:

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

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	liquid blue
Odor	characteristic
Odour threshold	No data available / Not applicable
pH	Not applicable, Mixture reacts with water.
Melting point	No data available / Not applicable
Solidification temperature	No data available / Not applicable
Initial boiling point	> 70 °C (> 158 °F)
Initial boiling point	< 149 °C (< 300.2 °F)
Flash point	> 93 °C (> 199.4 °F)
Evaporation rate	No data available / Not applicable
Flammability	No data available / Not applicable
Explosive limits	No data available / Not applicable
Vapour pressure (25 °C (77 °F))	1,7 mbar
Vapour pressure (50 °C (122 °F))	< 300 mbar
Relative vapour density:	No data available / Not applicable
Density ()	1,08 g/cm ³
Bulk density	No data available / Not applicable
Solubility	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Insoluble
Solubility (qualitative) (Solvent: Acetone)	Soluble
Partition coefficient: n-octanol/water	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2 Other information

No data available / Not applicable

10. Stability and reactivity

10.1 Reactivity

Reacts with strong oxidants.

Acids.

Reducing agents.

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.

Hydrocarbons

nitrogen oxides

Rapid polymerisation may generate excessive heat and pressure.

11. Toxicological data**11.1 Information on toxicological effects****Acute oral toxicity:**

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

Hazardous substances CAS-No.	Value type	Value	Species	Method
Tetramethylene dimethacrylate 2082-81-7	LD50	10.066 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
2,4,6-Triallyloxy-s-triazine 101-37-1	LD50	753 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
2-[[[2,2-bis[[[1-oxoallyl]oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl]diacrylate 94108-97-1	LD50	> 5.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Fatty acid amide 126098-16-6	LD50	> 2.000 mg/kg	rat	not specified
Cumene hydroperoxide 80-15-9	LD50	382 mg/kg	rat	other guideline:
Acetic acid, 2-phenylhydrazide 114-83-0	LD50	270 mg/kg	rat	not specified
maleic acid 110-16-7	LD50	708 mg/kg	rat	not specified
1,4-Naphthalenedione 130-15-4	LD50	124 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

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

Hazardous substances CAS-No.	Value type	Value	Species	Method
Tetramethylene dimethacrylate 2082-81-7	LD50	> 3.000 mg/kg	rabbit	not specified
2,4,6-Triallyloxy-s-triazine 101-37-1	LD50	> 2.000 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
2-[[[2,2-bis[[[1-oxoallyl]oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl]diacrylate 94108-97-1	LD50	> 2.000 mg/kg	rat	not specified
Fatty acid amide 126098-16-6	LD50	> 2.000 mg/kg	rat	not specified

Cumene hydroperoxide 80-15-9	LD50	530 - 1.060 mg/kg	rat	other guideline:
Cumene hydroperoxide 80-15-9	Acute toxicity estimate (ATE)	1.100 mg/ kg		Expert judgement
maleic acid 110-16-7	LD50	1.560 mg/ kg	rabbit	not specified

Acute inhalative toxicity:

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

Hazardous substances CAS-No.	Value type	Value	Test atmos- phere	Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	LC50	1,370 mg/l	vapour	4 h	rat	not specified
1,4-Naphthalenedione 130-15-4	LC50	0,046 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation

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

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	corrosive		rabbit	Draize Test
maleic acid 110-16-7	irritating	24 h	human	Patch Test
1,4-Naphthalenedione 130-15-4	Cate- gory 1C (corrosi- ve)		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
2-[[[2,2-bis[[[(1-oxoallyl)oxy] methyl]butoxy]methyl]- 2-ethyl-1,3-propanediyl diacrylate 94108-97-1	Cate- gory 2 (irritant)		rabbit	EU Method B.5 (Acute Toxicity: Eye Irritation / Corrosion)
maleic acid 110-16-7	highly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitisation

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
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Tetramethylene dimethacrylate 2082-81-7	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
maleic acid 110-16-7	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
maleic acid 110-16-7	sensitising	Mouse local lymphnode assay (LLNA)	guinea pig	OECD Guideline 406 (Skin Sensitisation)
1,4-Naphthalenedione 130-15-4	sensitising	not specified	guinea pig	not specified

Germ cell mutagenicity:

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

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Tetramethylene dimethacrylate 2082-81-7	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Tetramethylene dimethacrylate 2082-81-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Tetramethylene dimethacrylate 2082-81-7	positive	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Cumene hydroperoxide 80-15-9	positive	bacterial reverse mutation assay (e.g Ames test)	without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
maleic acid 110-16-7	negative	bacterial reverse mutation assay (e.g Ames test)	no data		Ames Test
maleic acid 110-16-7	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)

Carcinogenicity:

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

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
maleic acid 110-16-7	not carcinogenic	oral: feed	2 y daily	rat	male/ female	OECD Guideline 451 (Carcinogenicity Studies)

Reproductive toxicity:

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

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
maleic acid 110-16-7	NOAEL F1 150 mg/kg NOAEL F2 55 mg/kg	Two generation study	oral: gavage	rat	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.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
Cumene hydroperoxide 80-15-9		inhalation: aerosol	6 h/d 5 d/w	rat	not specified
maleic acid 110-16-7	NOAEL >= 40 mg/kg	oral: feed	90 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Aspiration hazard: No data available.

12. Ecological information

General ecological information:

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

12.1 Toxicity

Toxicity (Fish):

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

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Tetramethylene dimethacrylate 2082-81-7	LC50	32,5 mg/l	48 h		DIN 38412-15

2,4,6-Triallyloxy-s-triazine 101-37-1	LC50	4,36 mg/l	96 h	On- corhyn- chus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-[[2,2-bis[[1-oxoallyl]oxy] methyl]butoxy]methyl]- 2-ethyl-1,3-propanediyl diacrylate 94108-97-1	LC50	1,2 mg/l	96 h	Cyprinus carpio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Fatty acid amide 126098-16-6	LC50	Toxicity > Water solubi- lity	96 h	Cyprinus carpio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Cumene hydroperoxide 80-15-9	LC50	3,9 mg/l	96 h	On- corhyn- chus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
maleic acid 110-16-7	LC50	> 245 mg/l	48 h	Leucis- cus idus	DIN 38412-15
1,4-Naphthalenedione 130-15-4	LC50	0,045 mg/l	96 h	Oryzias latipes	OECD Guideline 203 (Fish, Acute Toxicity Test)

Toxicity (Daphnia):

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

Hazardous substances CAS-No.	Value type	Value	Expo- sure time	Spe- cies	Method
2,4,6-Triallyloxy-s-triazine 101-37-1	EC50	19,4 mg/l	48 h	Daph- nia magna	OECD Guideline 202 (Daph- nia sp. Acute Immobilisation Test)
2-[[2,2-bis[[1-oxoallyl]oxy] methyl]butoxy]methyl]- 2-ethyl-1,3-propanediyl diacrylate 94108-97-1	EC50	> 10 mg/l	48 h	Daph- nia magna	OECD Guideline 202 (Daph- nia sp. Acute Immobilisation Test)
Fatty acid amide 126098-16-6	EC50	Toxicity > Water solubi- lity	48 h	Daph- nia magna	OECD Guideline 202 (Daph- nia sp. Acute Immobilisation Test)
Cumene hydroperoxide 80-15-9	EC50	18,84 mg/l	48 h	Daph- nia magna	OECD Guideline 202 (Daph- nia sp. Acute Immobilisation Test)
maleic acid 110-16-7	EC50	42,81 mg/l	48 h	Daph- nia magna	OECD Guideline 202 (Daph- nia sp. Acute Immobilisation Test)
1,4-Naphthalenedione 130-15-4	EC50	0,026 mg/l	48 h	Daph- nia magna	OECD Guideline 202 (Daph- nia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

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

Hazardous substances CAS-No.	Value type	Value	Expo- sure time	Spe- cies	Method
Tetramethylene dimethacrylate 2082-81-7	NOEC	5,09 mg/l	21 d	Daph- nia magna	OECD 211 (Daphnia magna, Reproduction Test)
Fatty acid amide 126098-16-6	NOEC	Toxicity > Water solubi- lity	21 d	Daph- nia magna	OECD 211 (Daphnia magna, Reproduction Test)
maleic acid 110-16-7	NOEC	10 mg/l	21 d	Daph- nia magna	other guideline:

Toxicity (Algae):

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

Hazardous substances CAS-No.	Value type	Value	Expo- sure time	Species	Method
Tetramethylene dimethacrylate 2082-81-7	EC50	9,79 mg/l	72 h	Desmodes- mus subspi- catus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Tetramethylene dimethacrylate 2082-81-7	NOEC	2,11 mg/l	72 h	Desmodes- mus subspi- catus	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-[[2,2-bis[[[(1-oxoallyl)oxy] methyl]butoxy)methyl]- 2-ethyl-1,3-propanediyl diacrylate 94108-97-1	EC50	> 12 mg/l	72 h	Pseudo- kirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-[[2,2-bis[[[(1-oxoallyl)oxy] methyl]butoxy)methyl]- 2-ethyl-1,3-propanediyl diacrylate 94108-97-1	NOEC	< 0,35 mg/l	72 h	Pseudo- kirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Fatty acid amide 126098-16-6	EC50	0,025 mg/l	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
Fatty acid amide 126098-16-6	NOEC	0,0073 mg/l	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
Cumene hydroperoxide 80-15-9	EC50	3,1 mg/l	72 h	Desmo- desmus subspicatus (reported as Scenedes- mus subspi- catus)	OECD Guideline 201 (Alga, Growth Inhibition Test)

Cumene hydroperoxide 80-15-9	NOEC	1 mg/l	72 h	Desmo- desmus subspicatus (reported as Scenedes- mus subspi- catus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic acid 110-16-7	EC50	74,35 mg/l	72 h	Pseudo- kirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic acid 110-16-7	EC10	11,8 mg/l	72 h	Pseudo- kirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,4-Naphthalenedione 130-15-4	NOEC	0,07 mg/l	72 h	Pseudo- kirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,4-Naphthalenedione 130-15-4	EC50	0,42 mg/l	72 h	Pseudo- kirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity to microorganisms

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

Hazardous substances CAS-No.	Value type	Value	Expo- sure time	Spe- cies	Method
Tetramethylene dimethac- rylate 2082-81-7	NOEC	20 mg/l	28 d	acti- vated sludge, dome- stic	not specified
2,4,6-Triallyloxy-s-triazine 101-37-1	EC0	5 mg/l	3 h		OECD Guideline 209 (Ac- tivated Sludge, Respiration Inhibition Test)
Fatty acid amide 126098-16-6	EC50	Toxicity > Water solubi- lity	3 h	acti- vated sludge of a predo- minant- ly do- mestic sewage	OECD Guideline 209 (Ac- tivated Sludge, Respiration Inhibition Test)
Cumene hydroperoxide 80-15-9	EC10	70 mg/l	30 min		not specified
maleic acid 110-16-7	EC10	44,6 mg/l	18 h	Pseu- domo- nas putida	DIN 38412, part 8 (Pseu- domonas Zellvermehrungs- hemmTest)
1,4-Naphthalenedione 130-15-4	EC50	5,94 mg/l	3h	acti- vated sludge of a predo- minant- ly do- mestic sewage	OECD Guideline 209 (Ac- tivated Sludge, Respiration Inhibition Test)

12.2 Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	De-gradability	Exposure time	Method
Tetramethylene dimethacrylate 2082-81-7	readily biodegradable	aerobic	84 %	28 d	OECD Guideline 310 (Ready Biodegradability CO ₂ in Sealed Vessels (Headspace Test))
2,4,6-Triallyloxy-s-triazine 101-37-1		aerobic	7 - 9 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO ₂ Evolution Test)
2-[[2,2-bis[[1-(1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl diacrylate 94108-97-1		aerobic	4 - 14 %	29 d	OECD Guideline 301 B (Ready Biodegradability: CO ₂ Evolution Test)
Fatty acid amide 126098-16-6	not readily biodegradable.	aerobic	7 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO ₂ Evolution Test)
Cumene hydroperoxide 80-15-9	not readily biodegradable.	aerobic	3 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO ₂ Evolution Test)
maleic acid 110-16-7	readily biodegradable.	aerobic	97,08 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO ₂ Evolution Test)
1,4-Naphthalenedione 130-15-4	not readily biodegradable.	aerobic	0 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

12.3 Bioaccumulation potential

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Cumene hydroperoxide 80-15-9	9,1			calculation	OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)

12.4 Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
Tetramethylene dimethacrylate 2082-81-7	3,1		OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
2,4,6-Triallyloxy-s-triazine 101-37-1	2,8	20 °C	not specified
2-[[2,2-bis[[1-(1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl diacrylate 94108-97-1	4,14	30 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

Fatty acid amide 126098-16-6	> 6,5	20 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Cumene hydroperoxide 80-15-9	1,6	25 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Acetic acid, 2-phenylhydrazide 114-83-0	0,74		not specified
maleic acid 110-16-7	-1,3	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
1,4-Naphthalenedione 130-15-4	1,71		not specified

12.5 Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Tetramethylene dimethacrylate 2082-81-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
2,4,6-Triallyloxy-s-triazine 101-37-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
2-[[[2,2-bis[[[1-oxoallyl]oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl diacrylate 94108-97-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Fatty acid amide 126098-16-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Cumene hydroperoxide 80-15-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
maleic acid 110-16-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
1,4-Naphthalenedione 130-15-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6 Other adverse effects

No data available.

13. Disposal considerations

13.1 Waste treatment method

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.

14. Transport information

14.1 UN number

ADR	3082
RID	3082
ADN	3082
IMDG	3082
IATA	3082

14.2 UN proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fatty acid amide)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fatty acid amide)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fatty acid amide)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fatty acid amide)
IATA	Environmentally hazardous substance, liquid, n.o.s. (Fatty acid amide)

14.3 Transport hazard class(es)

ADR	9
RID	9
ADN	9
IMDG	9
IATA	9

14.4 Packaging group

ADR	III
RID	III
ADN	III
IMDG	III
IATA	III

14.5 Environmental hazards

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

14.6 Special precautions for user

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

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

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

15. Regulatory information

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

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

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

National regulations/information (Germany):

WGK: WGK 2: significantly water endangering (Ordinance on facilities for handling substances that are hazardous to water (AwSV))

Classification according to AwSV, Annex 1 (5.2)

Storage class according to TRGS 510: 10

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:

H242	Heating may cause a fire.
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.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.