

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

Page 1 of 23

SDS No.: 316211

V012.2

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

1.1. Product identifier

LOCTITE 243 BO Known as Threadlocker

LOCTITE 243 BO Known as Threadlocker

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

Intended use:

Adhesive

1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Adhesives

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website https://mysds.henkel.com/index.html#/appSelection or www.henkel-adhesives.com.

1.4. Emergency telephone number

24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin irritation Category 2

H315 Causes skin irritation.

Serious eye irritation Category 2

H319 Causes serious eye irritation.

Skin sensitizer Category 1

H317 May cause an allergic skin reaction.

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 3

H412 Harmful to aquatic life with long lasting effects.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains Tetramethylene dimethacrylate

maleic acid

Acetic acid, 2-phenylhydrazide

Signal word: Warning

Hazard statement: H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statement: "***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 statement: P280 Wear protective gloves.

Prevention P261 Avoid breathing vapors.

P273 Avoid release to the environment.

Precautionary statement: P302+P352 IF ON SKIN: Wash with plenty of soap and water.

Response P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

None if used properly.

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

This mixture does not contain any substances in a concentration \geq the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M- factors and ATEs	Add. Information
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	STOT SE 3; H335; C >= 10 %	
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		
2-[[2,2-bis[[(1- oxoallyl)oxy]methyl]butoxy]met hyl]-2-ethyl-1,3-propanediyl diacrylate 94108-97-1 302-434-9	1- < 5 %	Eye Irrit. 2, H319 Aquatic Chronic 2, H411		
Cumene hydroperoxide 80-15-9 201-254-7 01-2119475796-19	0,1-< 1 %	STOT RE 2, H373 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	Eye Irrit. 2; H319; C 1 - < 3 % Skin Irrit. 2; H315; C 3 - < 10 % Eye Dam. 1; H318; C 3 - < 10 % STOT SE 3; H335; C >= 1 % Skin Corr. 1B; H314; C >= 10 % ===== dermal:ATE = 1.100 mg/kg	
maleic acid 110-16-7 203-742-5 01-2119488705-25	0,1-< 1 %	Acute Tox. 4, Oral, H302 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Skin Sens. 1, H317 Acute Tox. 4, Dermal, H312	Skin Sens. 1; H317; C >= 0,1 %	
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		
1,4-Naphthalenedione 130-15-4 204-977-6	0,0025-< 0,025 %	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 acute = 10 M chronic = 1	

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

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

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

Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

Eye contact:

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

Ingestion:

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

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

SKIN: Rash, Urticaria.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

water, carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

5.3. Advice for firefighters

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

Additional information:

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

Keep away from sources of ignition.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Dispose of contaminated material as waste according to Section 13.

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

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

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin and eye contact.

See advice in section 8

Hygiene measures:

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for

Great Britain

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9 [SILICA, AMORPHOUS, RESPIRABLE DUST]		2,4	Time Weighted Average (TWA):		EH40 WEL
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9 [SILICA, AMORPHOUS, INHALABLE DUST]		6	Time Weighted Average (TWA):		EH40 WEL
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9 [Dust, inhalable dust]		10	Time Weighted Average (TWA):		EH40 WEL
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9 [Dust, respirable dust]		4	Time Weighted Average (TWA):		EH40 WEL
Ethene, homopolymer 9002-88-4 [DUST, INHALABLE DUST]		10	Time Weighted Average (TWA):		EH40 WEL
Ethene, homopolymer 9002-88-4 [DUST, RESPIRABLE DUST]		4	Time Weighted Average (TWA):		EH40 WEL
Propane-1,2-diol 57-55-6 [PROPANE-1,2-DIOL, PARTICULATES]		10	Time Weighted Average (TWA):		EH40 WEL
Propane-1,2-diol 57-55-6 [PROPANE-1,2-DIOL, TOTAL VAPOUR AND PARTICULATES]	150	474	Time Weighted Average (TWA):		EH40 WEL

Occupational Exposure Limits

Valid for

Ireland

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9 [DUSTS NON-SPECIFIC]		10	Time Weighted Average (TWA):		IR_OEL
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9 [SILICA, AMORPHOUS]		2,4	Time Weighted Average (TWA):		IR_OEL
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9 [SILICA, AMORPHOUS]		6	Time Weighted Average (TWA):		IR_OEL
Silane, dichlorodimethyl-, reaction products with silica 68611-44-9 [DUSTS NON-SPECIFIC]		4	Time Weighted Average (TWA):		IR_OEL
Ethene, homopolymer 9002-88-4 [DUSTS NON-SPECIFIC]		10	Time Weighted Average (TWA):		IR_OEL
Ethene, homopolymer 9002-88-4 [DUSTS NON-SPECIFIC]		4	Time Weighted Average (TWA):		IR_OEL
Propane-1,2-diol		10	Time Weighted Average		IR_OEL

57-55-6 [PROPANE-1,2-DIOL]			(TWA):	
Propane-1,2-diol	150	470	Time Weighted Average	IR_OEL
57-55-6			(TWA):	
[PROPANE-1,2-DIOL]				

$\label{eq:predicted} \textbf{Predicted No-Effect Concentration (PNEC):}$

Name on list	Environmental Compartment	Exposure period	Value			Remarks	
			mg/l	ppm	mg/kg	others	
Tetramethylene dimethacrylate 2082-81-7	aqua (freshwater)		0,043 mg/l				
Tetramethylene dimethacrylate 2082-81-7	aqua (marine water)		0,004 mg/l				
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-propanediyl diacrylate 94108-97-1	aqua (freshwater)		0,0012 mg/l				
2-[[2,2-Bis[[(1- oxoallyl)oxy]methyl]butoxy]methyl]-2- ethyl-1,3-propanediyl diacrylate 94108-97-1	Soil				0,096 mg/kg		
2-[[2,2-Bis[[(1- oxoallyl)oxy]methyl]butoxy]methyl]-2- ethyl-1,3-propanediyl diacrylate 94108-97-1	sediment (marine water)				0,005 mg/kg		
2-[[2,2-Bis[[(1- oxoallyl)oxy]methyl]butoxy]methyl]-2- ethyl-1,3-propanediyl diacrylate 94108-97-1	sediment (freshwater)				0,048 mg/kg		
2-[[2,2-Bis[[(1- oxoallyl)oxy]methyl]butoxy]methyl]-2- ethyl-1,3-propanediyl diacrylate 94108-97-1	sewage treatment plant (STP)		100 mg/l				
2-[[2,2-Bis[[(1- oxoallyl)oxy]methyl]butoxy]methyl]-2- ethyl-1,3-propanediyl diacrylate 94108-97-1	aqua (intermittent releases)		0,012 mg/l				
2-[[2,2-Bis[[(1-oxoallyl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl diacrylate 94108-97-1	aqua (marine water)		0,00012 mg/l				
.alpha.,.alphaDimethylbenzyl hydroperoxide 80-15-9	aqua (freshwater)		0,0031 mg/l				
.alpha.,.alphaDimethylbenzyl hydroperoxide 80-15-9	aqua (intermittent releases)		0,031 mg/l				
.alpha.,.alphaDimethylbenzyl hydroperoxide 80-15-9	aqua (marine water)		0,00031 mg/l				

.alpha.,.alphaDimethylbenzyl	sewage	0,35 mg/l		
hydroperoxide	treatment plant			
80-15-9	(STP)			
.alpha.,.alphaDimethylbenzyl	sediment		0,023	
hydroperoxide	(freshwater)		mg/kg	
80-15-9				
.alpha.,.alphaDimethylbenzyl	sediment		0,0023	
hydroperoxide	(marine water)		mg/kg	
80-15-9				
.alpha.,.alphaDimethylbenzyl	Soil		0,0029	
hydroperoxide			mg/kg	
80-15-9				
Maleic acid	aqua	0,1 mg/l		
110-16-7	(freshwater)			
Maleic acid	aqua	0,4281		
110-16-7	(intermittent	mg/l		
	releases)			
Maleic acid	sediment		0,334	
110-16-7	(freshwater)		mg/kg	
Maleic acid	sewage	44,6 mg/l		
110-16-7	treatment plant			
	(STP)			
Maleic acid	aqua (marine	0,01 mg/l		
110-16-7	water)			
Maleic acid	sediment		0,0334	
110-16-7	(marine water)		mg/kg	
Maleic acid	Soil		0,0415	
110-16-7			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/m3	
Tetramethylene dimethacrylate 2082-81-7	General population	inhalation	Long term exposure - systemic effects		4,3 mg/m3	
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	
2,4,6-Triallyloxy-1,3,5-triazine 101-37-1	Workers	inhalation	Acute/short term exposure - systemic effects		134,4 mg/m3	
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/m3	
.alpha.,alphaDimethylbenzyl hydroperoxide 80-15-9	Workers	inhalation	Long term exposure - systemic effects		6 mg/m3	
Maleic acid 110-16-7	Workers	dermal	Acute/short term exposure - local effects		0,55 mg/cm2	
Maleic acid 110-16-7	Workers	dermal	Long term exposure - local effects		0,04 mg/cm2	
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	
Maleic acid 110-16-7	Workers	inhalation	Acute/short term exposure - local effects		3 mg/m3	
Maleic acid 110-16-7	Workers	inhalation	Long term exposure - systemic effects		3 mg/m3	
Maleic acid 110-16-7	Workers	inhalation	Long term exposure - local effects		3 mg/m3	
Maleic acid 110-16-7	Workers	inhalation	Acute/short term exposure - systemic effects		3 mg/m3	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls: Ensure good ventilation/extraction.

Respiratory protection: Ensure adequate ventilation.

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

Hand protection:

Chemical-resistant protective gloves (EN 374).

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

nitrile rubber (NBR; >= 0.4 mm thickness)

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

nitrile rubber (NBR; >= 0.4 mm thickness)

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

Eye protection:

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

Skin protection:

Wear suitable protective clothing.

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

Advices to personal protection equipment:

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Delivery form liquid Colour blue Odor mild, Acrylic Physical state liquid

Melting point Not applicable, Product is a liquid

Solidification temperature < -30 °C (< -22 °F) Initial boiling point < 149 °C (< 300.2 °F) $> 70 \, ^{\circ}\text{C} \, (> 158 \, ^{\circ}\text{F})$ Initial boiling point Initial boiling point $> 150 \, ^{\circ}\text{C} \, (> 302 \, ^{\circ}\text{F})$

Flammability The product is not flammable.

Explosive limits Not applicable, The product is not flammable.

 $> 100 \, ^{\circ}\text{C} \, (> 212 \, ^{\circ}\text{F})$ Flash point

Not applicable, The product is not flammable. Auto-ignition temperature

Decomposition temperature Not applicable, Substance/mixture is not self-reactive, no organic

peroxide and does not decompose under foreseen conditions of use

Not applicable, Product is non-polar/aprotic.

Viscosity (kinematic) > 20,5 mm2/s

(40 °C (104 °F);)

рH

Solubility (qualitative) Soluble

(Solvent: Acetone) Solubility (qualitative)

Partition coefficient: n-octanol/water

Slight (20 °C (68 °F); Solvent: Water)

> Not applicable Mixture 1.7 mbar

Vapour pressure (25 °C (77 °F))

Vapour pressure < 300 mbar;no method / method unknown

(50 °C (122 °F)) Vapour pressure < 0,13 mbar

(20 °C (68 °F))

1,08 g/cm3 no method / method unknown Density (20 °C (68 °F))

Relative vapour density: > 1

(20 °C)

Particle characteristics Not applicable

Product is a liquid

9.2. Other information

Other information not applicable for this product

SECTION 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.

SECTION 11: Toxicological information

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

Acute oral toxicity:

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

Hazardous substances	Value	Value	Species	Method
CAS-No.	type			
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]buto xy]methyl]-2-ethyl-1,3- propanediyl diacrylate 94108-97-1	LD50	> 5.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Cumene hydroperoxide 80-15-9	LD50	382 mg/kg	rat	other guideline:
maleic acid 110-16-7	LD50	708 mg/kg	rat	not specified
Acetic acid, 2- phenylhydrazide 114-83-0	LD50	270 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	Value	Value	Species	Method
CAS-No.	type			
Tetramethylene	LD50	> 3.000 mg/kg	rabbit	not specified
dimethacrylate				
2082-81-7				
2,4,6-Triallyloxy-s-	LD50	> 2.000 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
triazine				
101-37-1				
2-[[2,2-bis[[(1-	LD50	> 2.000 mg/kg	rat	not specified
oxoallyl)oxy]methyl]buto				
xy]methyl]-2-ethyl-1,3-				
propanediyl diacrylate				
94108-97-1				
Cumene hydroperoxide	Acute	1.100 mg/kg		Expert judgement
80-15-9	toxicity			
	estimate			
	(ATE)			
maleic acid	LD50	1.560 mg/kg	rabbit	not specified
110-16-7				

Acute inhalative toxicity:

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

Hazardous substances	Value	Value	Test atmosphere	Exposure	Species	Method
CAS-No.	type			time		
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	Result	Exposure	Species	Method
CAS-No.		time		
Tetramethylene	not irritating	24 h	rabbit	FDA Guideline
dimethacrylate				
2082-81-7				
Cumene hydroperoxide	corrosive		rabbit	Draize Test
80-15-9				
maleic acid	irritating	24 h	human	Patch Test
110-16-7				
1,4-Naphthalenedione	Category 1C		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
130-15-4	(corrosive)			

Serious eye damage/irritation:

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

Hazardous substances	Result	Exposure	Species	Method
CAS-No.		time		
Tetramethylene	not irritating		rabbit	equivalent or similar to OECD Guideline 405 (Acute Eye
dimethacrylate				Irritation / Corrosion)
2082-81-7				
2-[[2,2-bis[[(1-	Category 2		rabbit	EU Method B.5 (Acute Toxicity: Eye Irritation /
oxoallyl)oxy]methyl]buto	(irritant)			Corrosion)
xy]methyl]-2-ethyl-1,3-				
propanediyl diacrylate				
94108-97-1				
maleic acid	highly		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
110-16-7	irritating			

Respiratory or skin sensitization:

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

Hazardous substances	Result	Test type	Species	Method
CAS-No.				
Tetramethylene	sensitising	Mouse local lymphnode	mouse	OECD Guideline 429 (Skin Sensitisation:
dimethacrylate		assay (LLNA)		Local Lymph Node Assay)
2082-81-7				
maleic acid	sensitising	Mouse local lymphnode	mouse	OECD Guideline 429 (Skin Sensitisation:
110-16-7		assay (LLNA)		Local Lymph Node Assay)
maleic acid	sensitising	Mouse local lymphnode	guinea pig	OECD Guideline 406 (Skin Sensitisation)
110-16-7		assay (LLNA)		
1,4-Naphthalenedione	sensitising	not specified	guinea pig	not specified
130-15-4				

Germ cell mutagenicity:

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

Hazardous substances	Result	Type of study /	Metabolic	Species	Method
CAS-No.		Route of	activation /		
		administration	Exposure time		
Tetramethylene	negative	in vitro mammalian	with and without		OECD Guideline 476 (In vitro
dimethacrylate		chromosome			Mammalian Cell Gene
2082-81-7		aberration test			Mutation Test)
Tetramethylene	negative	bacterial reverse	with and without		OECD Guideline 471
dimethacrylate		mutation assay (e.g			(Bacterial Reverse Mutation
2082-81-7		Ames test)			Assay)
Tetramethylene	positive	in vitro mammalian	with and without		OECD Guideline 473 (In vitro
dimethacrylate		chromosome			Mammalian Chromosome
2082-81-7		aberration test			Aberration Test)
Cumene hydroperoxide	positive	bacterial reverse	without		OECD Guideline 471
80-15-9		mutation assay (e.g			(Bacterial Reverse Mutation
		Ames test)			Assay)
maleic acid	negative	bacterial reverse	no data		Ames Test
110-16-7		mutation assay (e.g			
		Ames test)			
maleic acid	negative	mammalian cell	with and without		OECD Guideline 476 (In vitro
110-16-7		gene mutation assay			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	Two generation	oral: gavage	rat	OECD Guideline 416 (Two- Generation Reproduction
	NOAEL F2 55 mg/kg	study			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	Species	Method
			treatment		
Cumene hydroperoxide		inhalation:	6 h/d	rat	not specified
80-15-9		aerosol	5 d/w		
maleic acid	NOAEL >= 40 mg/kg	oral: feed	90 d	rat	OECD Guideline 408
110-16-7			daily		(Repeated Dose 90-Day
					Oral Toxicity in Rodents)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:

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

12.1. Toxicity

Toxicity (Fish):

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

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Tetramethylene	LC50	32,5 mg/l	48 h		DIN 38412-15
dimethacrylate					
2082-81-7					
2,4,6-Triallyloxy-s-triazine	LC50	4,36 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish,
101-37-1					Acute Toxicity Test)
2-[[2,2-bis[[(1-	LC50	1,2 mg/l	96 h	Cyprinus carpio	OECD Guideline 203 (Fish,
oxoallyl)oxy]methyl]butoxy]					Acute Toxicity Test)
methyl]-2-ethyl-1,3-					
propanediyl diacrylate					
94108-97-1					
Cumene hydroperoxide	LC50	3,9 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish,
80-15-9					Acute Toxicity Test)
maleic acid	LC50	> 245 mg/l	48 h	Leuciscus idus	DIN 38412-15
110-16-7					
1,4-Naphthalenedione	LC50	0,045 mg/l	96 h	Oryzias latipes	OECD Guideline 203 (Fish,
130-15-4					Acute Toxicity Test)

Toxicity (aquatic invertebrates):

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

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

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
2,4,6-Triallyloxy-s-triazine 101-37-1	EC50	19,4 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia 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 - 100 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Cumene hydroperoxide 80-15-9	EC50	18,84 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
maleic acid 110-16-7	EC50	42,81 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
1,4-Naphthalenedione 130-15-4	EC50	0,026 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity (aquatic invertebrates):

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Tetramethylene	NOEC	5,09 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia
dimethacrylate					magna, Reproduction Test)
2082-81-7					
maleic acid	NOEC	10 mg/l	21 d	Daphnia magna	other guideline:
110-16-7					· ·

Toxicity (Algae):

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

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type			1	
Tetramethylene dimethacrylate 2082-81-7	EC50	9,79 mg/l	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Tetramethylene dimethacrylate 2082-81-7	NOEC	2,11 mg/l	72 h	Desmodesmus subspicatus	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	Pseudokirchneriella 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	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Cumene hydroperoxide 80-15-9	EC50	3,1 mg/l	72 h	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Cumene hydroperoxide 80-15-9	NOEC	1 mg/l	72 h	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic acid 110-16-7	EC50	74,35 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic acid 110-16-7	EC10	11,8 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,4-Naphthalenedione 130-15-4	NOEC	0,07 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,4-Naphthalenedione 130-15-4	EC50	0,42 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity (microorganisms):

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

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type			_	
Tetramethylene dimethacrylate 2082-81-7	NOEC	20 mg/l	28 d	activated sludge, domestic	not specified
2,4,6-Triallyloxy-s-triazine 101-37-1	EC0	5 mg/l	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Cumene hydroperoxide 80-15-9	EC10	70 mg/l	30 min	not specified	not specified
maleic acid 110-16-7	EC10	44,6 mg/l	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)
1,4-Naphthalenedione 130-15-4	EC50	5,94 mg/l	3 h	activated sludge of a predominantly domestic sewag	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

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

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Tetramethylene dimethacrylate 2082-81-7	readily biodegradable	aerobic	84 %	28 d	OECD Guideline 310 (Ready BiodegradabilityCO2 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: CO2 Evolution Test)
2-[[2,2-bis[[(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: CO2 Evolution Test)
Cumene hydroperoxide 80-15-9	not readily biodegradable.	aerobic	3 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
maleic acid 110-16-7	readily biodegradable	aerobic	97,08 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 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. Bioaccumulative potential

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

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

12.4. Mobility in soil

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

Hazardous substances CAS-No.	LogPow	Temperature	Method
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- 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)
Cumene hydroperoxide 80-15-9	1,6	25 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
maleic acid 110-16-7	-1,3	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Acetic acid, 2- phenylhydrazide 114-83-0	0,74		not specified
1,4-Naphthalenedione 130-15-4	1,71		not specified

12.5. Results of PBT and vPvB assessment

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

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

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

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

Dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:

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

Waste code

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

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

SECTION 14: Transport information

14.1. UN number or ID number

Not dangerous goods
Not dangerous goods

14.2. UN proper shipping name

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.3. Transport hazard class(es)

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.4. Packing group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.5. Environmental hazards

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

14.6. Special precautions for user

ADR not applicable

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

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009): Not applicable Prior Informed Consent (PIC) (Regulation (EU) No 649/2012): Not applicable Persistent organic pollutants (Regulation (EU) 2019/1021): Not applicable

VOC content < 3 %

(2010/75/EC)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text

of all abbreviations indicated by codes in this safety data sheet are as follows:

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.

ED: Substance identified as having endocrine disrupting properties

EU OEL:

Substance with a Union workplace exposure limit

EU EXPLD 1:

Substance listed in Annex I, Reg (EC) No. 2019/1148

EU EXPLD 2

Substance listed in Annex II, Reg (EC) No. 2019/1148

SVHC:

Substance of very high concern (REACH Candidate List)

PBT:

Substance fulfilling persistent, bioaccumulative and toxic criteria

PBT/vPvB: Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very

bioaccumulative criteria

vPvB: Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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

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Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

ASTM: American Society for Testing and Materials

AwSV: Ordinance on Installations for the Handling of Substances Hazardous to Water

CAS: Chemical Abstract Service

CLP: Regulation (EC) No 1272/2008

CMR: cancerogenic, mutagenic or reprotoxic

DIN: German Institute for Standardization

ECx: Effective concentration (x% effective level)

ECHA: European Chemicals Agency

EC-Nummer: Substance number in the EU-inventories EINECS/ELINCS

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

EN: European Standard

ENCS: Japanese chemical inventory EPA: US Environmental Protection Agency EU: European Union

EWC: European Waste Catalogue

GHS: Globally Harmonised System for Classification and Labelling of Chemicals

GLP: Good Laboratory Practice

IARC: International Agency for Research of Cancer IATA: International Air Transport Association

IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

IC50: half maximal inhibitory concentration ICAO: International Civil Aviation Organization

IMDG-Code: International Maritime Code for Dangerous Goods

IMO: International Maritime Organization ISO: International Standardization Organisation

LC50: Median lethal concentration

LD50: Median lethal dose

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

n.o.s.: not otherwise specified

NO(A)EC: No (adverse) effect concentration

NO(A)EL: No (adverse) effect level

OECD: Organisation for Economic Co-operation and Development

OPPT: US EPA Office of Pollution Prevention and Toxics

PBT: Persistent, bioaccumulative, toxic

(Q)SAR: (Quantitative) structure–activity relationship

REACH: Regulation (EC) No. 1907/2006

RID: Regulations concerning the International Transport of Dangerous Goods by Rail

SADT: Self Accelerating Decomposition Temperature

SDS: Safety Data Sheet

TRGS: German Technical Rules for hazardous substances

UN: United Nations

VOC: Volatile Organic Compound

814.018 VOC Reg CH: Swiss Ordinance 814.018 on the Incentive Tax on Volatile Organic Compounds

vPvB: Very persistent, very bioaccumulative

VwVwS: Administrative Regulation on Substances Hazardous to Waters

WGK: Water hazard class

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