

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

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LOCTITE 3D 3860 HDT180 High Heat Black

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

1.1. Product identifier

LOCTITE 3D 3860 HDT180 High Heat Black

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

ua-productsafety.uk@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 sensitizer Category 1

H317 May cause an allergic skin reaction.

Chronic hazards to the aquatic environment Category 2

H411 Toxic to aquatic life with long lasting effects.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

Dicyclopentyldimethylene diacrylate

2,2'-Ethylenedioxydiethyl dimethacrylate

Hydroxypropyl methacrylate

Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

Signal word: Warning

Hazard statement: H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statement: P273 Avoid release to the environment.

Prevention P280 Wear protective gloves.

Precautionary statement:

Response

P333+P313 If skin irritation or rash occurs: 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. Care should be taken during the cure of these products by UV radiation to avoid exposure of the skin and especially of the eyes to direct or reflected UV radiation as long term effects could be harmful.

Following substances are present in a concentration >= 0.1% and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in concentration ≥ the concentration limit 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
Dicyclopentyldimethylene diacrylate 42594-17-2 255-901-3 01-2120051112-76	50- 100 %	Skin Sens. 1B, H317 Aquatic Chronic 2, H411		
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0 203-652-6 01-2119969287-21	5-< 10 %	Skin Sens. 1B, H317	dermal:ATE = > 5.000 mg/kg inhalation:ATE = 28,17 mg/l;dust/mist	
Hydroxypropyl methacrylate 27813-02-1 248-666-3 01-2119490226-37	1- < 5 %	Skin Sens. 1, H317 Eye Irrit. 2, H319		
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7 423-340-5 01-2119489401-38 01-2119936813-33	0,1-< 1 %	Skin Sens. 1A, H317 Aquatic Chronic 4, H413		
Acrylic acid 79-10-7 201-177-9 01-2119452449-31	0,1-< 1 %	Acute Tox. 4, Dermal, H312 Skin Corr. 1A, H314 Flam. Liq. 3, H226 Acute Tox. 4, Oral, H302 Acute Tox. 4, Inhalation, H332 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 STOT SE 3, H335	STOT SE 3; H335; C >= 1 % ===== M acute = 1 ===== dermal:ATE = 1.100 mg/kg inhalation:ATE = 11 mg/l;vapour	EU OEL

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.

Prolonged or repeated contact may cause eye irritation.

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:

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

Ventilation will remove any ozone that may be produced by the ultra violet lamp

Hygiene measures:

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities

Store in sealed original container.

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/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Acrylic acid 79-10-7 [ACRYLIC ACID (PROP-2-ENOIC ACID)]	10	29	Time Weighted Average (TWA):	Indicative	ECTLV
Acrylic acid 79-10-7 [ACRYLIC ACID (PROP-2-ENOIC ACID)]	20	59	Short Term Exposure Limit (STEL):	Indicative	ECTLV
Acrylic acid 79-10-7 [ACRYLIC ACID]	10	29	Time Weighted Average (TWA):		EH40 WEL
Acrylic acid 79-10-7 [Acrylic acid]	20	59	Short Term Exposure Limit (STEL):	1 minute	EH40 WEL

Occupational Exposure Limits

Valid for

Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Acrylic acid 79-10-7 [ACRYLIC ACID (PROP-2-ENOIC ACID)]	10	29	Time Weighted Average (TWA):	Indicative	ECTLV
Acrylic acid 79-10-7 [ACRYLIC ACID (PROP-2-ENOIC ACID)]	20	59	Short Term Exposure Limit (STEL):	Indicative	ECTLV
Acrylic acid 79-10-7 [ACRYLIC ACID]	20	59	Short Term Exposure Limit (STEL):	1 minute Indicative OELV	IR_OEL
Acrylic acid 79-10-7 [ACRYLIC ACID]	10	29	Time Weighted Average (TWA):	Indicative OELV	IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
		P	mg/l	ppm	mg/kg	others	
(Octahydro-4,7-methano-1H- indenediyl)bis(methylene) diacrylate 42594-17-2	aqua (freshwater)		0,0016 mg/l				
(Octahydro-4,7-methano-1H- indenediyl)bis(methylene) diacrylate 42594-17-2	aqua (marine water)		0,00016 mg/l				
(Octahydro-4,7-methano-1H- indenediyl)bis(methylene) diacrylate 42594-17-2	sediment (freshwater)				0,6576 mg/kg		
(Octahydro-4,7-methano-1H- indenediyl)bis(methylene) diacrylate 42594-17-2	sediment (marine water)				0,0658 mg/kg		
(Octahydro-4,7-methano-1H- indenediyl)bis(methylene) diacrylate 42594-17-2	Soil				0,1306 mg/kg		
(Octahydro-4,7-methano-1H- indenediyl)bis(methylene) diacrylate 42594-17-2	sewage treatment plant (STP)		10 mg/l				
(Octahydro-4,7-methano-1H- indenediyl)bis(methylene) diacrylate 42594-17-2	aqua (intermittent releases)		0,016 mg/l				
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	aqua (freshwater)		0,164 mg/l				
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	aqua (marine water)		0,0164 mg/l				
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	sewage treatment plant (STP)		10 mg/l				
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	aqua (intermittent releases)		0,164 mg/l				
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	sediment (freshwater)				1,85 mg/kg		
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	sediment (marine water)				0,185 mg/kg		
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Soil				0,274 mg/kg		
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Air						no hazard identified
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Predator						no potential for bioaccumulation
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	aqua (freshwater)		0,904 mg/l				
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	aqua (marine water)		0,904 mg/l				
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	sewage treatment plant (STP)		10 mg/l				
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	aqua (intermittent releases)		0,972 mg/l				
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	sediment (freshwater)				6,28 mg/kg		
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	sediment (marine water)				6,28 mg/kg		
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	Soil				0,727 mg/kg		
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	Marine water - intermittent		0,972 mg/l				
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	Air						no hazard identified
Methacrylic acid, monoester with propane- 1,2-diol	Predator						no potential for bioaccumulation

27813-02-1	1		1 1	l I
Phenyl bis(2,4,6-trimethylbenzoyl)-	aqua	0,001 mg/l		
phosphine oxide	(freshwater)			
162881-26-7				
Phenyl bis(2,4,6-trimethylbenzoyl)-	aqua	0,001 mg/l		
phosphine oxide	(intermittent			
162881-26-7	releases)			
Phenyl bis(2,4,6-trimethylbenzoyl)-	aqua (marine	0,001 mg/l		
phosphine oxide	water)			
162881-26-7				
Phenyl bis(2,4,6-trimethylbenzoyl)-	sewage	1 mg/l		
phosphine oxide	treatment plant			
162881-26-7	(STP)			
Phenyl bis(2,4,6-trimethylbenzoyl)-	sediment		0,712	
phosphine oxide	(freshwater)		mg/kg	
162881-26-7				
Phenyl bis(2,4,6-trimethylbenzoyl)-	sediment		0,712	
phosphine oxide	(marine water)		mg/kg	
162881-26-7				
Phenyl bis(2,4,6-trimethylbenzoyl)-	Soil		20 mg/kg	
phosphine oxide				
162881-26-7				
Acrylic acid	aqua	0,003 mg/l		
79-10-7	(freshwater)			
Acrylic acid	aqua (marine	0,0003		
79-10-7	water)	mg/l		
Acrylic acid	sewage	0,9 mg/l		
79-10-7	treatment plant			
	(STP)			
Acrylic acid	sediment		0,0236	
79-10-7	(freshwater)		mg/kg	
Acrylic acid	sediment		0,00236	
79-10-7	(marine water)		mg/kg	
Acrylic acid	Soil		1 mg/kg	
79-10-7				
Acrylic acid	oral		0,03 g/kg	
79-10-7				
Acrylic acid	Air			no hazard identified
79-10-7				

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Workers	inhalation	Long term exposure - systemic effects		48,5 mg/m3	no hazard identified
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Workers	dermal	Long term exposure - systemic effects		13,9 mg/kg	no hazard identified
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	General population	inhalation	Long term exposure - systemic effects		14,5 mg/m3	no hazard identified
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	General population	dermal	Long term exposure - systemic effects		8,33 mg/kg	no hazard identified
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	General population	oral	Long term exposure - systemic effects		8,33 mg/kg	no hazard identified
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	Workers	dermal	Long term exposure - systemic effects		4,2 mg/kg	no hazard identified
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	Workers	Inhalation	Long term exposure - systemic effects		14,7 mg/m3	no hazard identified
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	General population	dermal	Long term exposure - systemic effects		2,5 mg/kg	no hazard identified
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	General population	Inhalation	Long term exposure - systemic effects		8,8 mg/m3	no hazard identified
Methacrylic acid, monoester with propane- 1,2-diol 27813-02-1	General population	oral	Long term exposure - systemic effects		2,5 mg/kg	no hazard identified
Phenyl bis(2,4,6-trimethylbenzoyl)- phosphine oxide 162881-26-7	Workers	Inhalation	Long term exposure - systemic effects		21 mg/m3	
Phenyl bis(2,4,6-trimethylbenzoyl)- phosphine oxide 162881-26-7	Workers	dermal	Long term exposure - systemic effects		3 mg/kg	
Phenyl bis(2,4,6-trimethylbenzoyl)- phosphine oxide 162881-26-7	General population	inhalation	Long term exposure - systemic effects		5,2 mg/m3	
Phenyl bis(2,4,6-trimethylbenzoyl)- phosphine oxide 162881-26-7	General population	dermal	Long term exposure - systemic effects		1,5 mg/kg	
Phenyl bis(2,4,6-trimethylbenzoyl)- phosphine oxide 162881-26-7	General population	oral	Long term exposure - systemic effects		1,5 mg/kg	
Acrylic acid 79-10-7	Workers	inhalation	Long term exposure - local effects		30 mg/m3	no hazard identified
Acrylic acid 79-10-7	Workers	inhalation	Acute/short term exposure - local effects		30 mg/m3	no hazard identified
Acrylic acid 79-10-7	Workers	dermal	Acute/short term exposure - local effects		1 mg/cm2	no hazard identified
Acrylic acid 79-10-7	General population	dermal	Acute/short term exposure - local effects		1 mg/cm2	no hazard identified
Acrylic acid 79-10-7	General population	inhalation	Acute/short term exposure - local effects		3,6 mg/m3	no hazard identified
Acrylic acid 79-10-7	General population	inhalation	Long term exposure - local effects		3,6 mg/m3	no hazard identified

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

UV lamp should be designed, installed and operated in such a way as to eliminate exposure of the skin and eyes to stray radiation

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; \geq 0.4 mm thickness)

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

Eye protection:

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

Skin protection:

Wear suitable protective clothing.

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

Advices to personal protection equipment:

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

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

Melting point Not applicable, Product is a liquid

 $\begin{array}{ll} \mbox{Initial boiling point} & > 150 \ ^{\circ}\mbox{C} \ (> 302 \ ^{\circ}\mbox{F}) \\ \mbox{Flammability} & \mbox{Not applicable} \end{array}$

pH Not applicable

Viscosity (kinematic) Currently under determination

Viscosity, dynamic 200,00 - 600,00 mPa.s LCT STM 740; cone & plate

(Cone and plate; 25,0 °C (77 °F); Shear viscosity

gradient: 200,00 s-1; Swell time: 180 s)

Solubility (qualitative) Partially soluble

(Solvent: Water)

Partition coefficient: n-octanol/water Not applicable

Mixture ;no method

Density 1,1 g/cm3 no method

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Relative vapour density: Currently under determination

Particle characteristics Not applicable Product is a liquid

9.2. Other information

Vapour pressure

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.

Protect from direct sunlight.

Avoid contact with acids and oxidizing agents.

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

1.1 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			
Dicyclopentyldimethylene	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
diacrylate				
42594-17-2				
2,2'-Ethylenedioxydiethyl	LD50	10.837 mg/kg	rat	not specified
dimethacrylate				
109-16-0				
Hydroxypropyl	LD50	> 2.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
methacrylate				
27813-02-1				
Phenyl bis(2,4,6-	LD50	> 2.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
trimethylbenzoyl)-				
phosphine oxide				
162881-26-7				
Acrylic acid	LD50	1.500 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral
79-10-7				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			
Dicyclopentyldimethylene	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
diacrylate 42594-17-2				
2,2'-Ethylenedioxydiethyl	Acute	> 5.000 mg/kg		Expert judgement
dimethacrylate	toxicity			
109-16-0	estimate			
	(ATE)			
Hydroxypropyl	LD50	> 5.000 mg/kg	rabbit	not specified
methacrylate				
27813-02-1				
Phenyl bis(2,4,6-	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
trimethylbenzoyl)-				
phosphine oxide				
162881-26-7				
Acrylic acid	Acute	1.100 mg/kg		Expert judgement
79-10-7	toxicity			
	estimate			
	(ATE)			
Acrylic acid	LD50	> 2.000 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
79-10-7				

Acute inhalative toxicity:

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

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Acute toxicity estimate (ATE)	28,17 mg/l	dust/mist			Expert judgement
Acrylic acid 79-10-7	LC0	5,1 mg/l	vapour	4 h	rat	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
Acrylic acid 79-10-7	Acute toxicity estimate (ATE)	11 mg/l	vapour			Expert judgement

Skin corrosion/irritation:

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

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Dicyclopentyldimethylene diacrylate 42594-17-2	not irritating		In vitro	OECD Guideline 439 (In Vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	not irritating	24 h	rabbit	Draize Test
Hydroxypropyl methacrylate 27813-02-1	not irritating	24 h	rabbit	Draize Test
Acrylic acid 79-10-7	Category 1 (corrosive)	3 min	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
Dicyclopentyldimethylene diacrylate	not irritating		In vitro	OECD Guideline 437 (BCOP)
42594-17-2				
2,2'-Ethylenedioxydiethyl	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
dimethacrylate				
109-16-0				
Hydroxypropyl	Category 2B		rabbit	Draize Test
methacrylate	(mildly			
27813-02-1	irritating to			
	eyes)			
Acrylic acid	Category 1		rabbit	BASF Test
79-10-7	(irreversible			
	effects on the			
	eye)			

Respiratory or skin sensitization:

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

Hazardous substances CAS-No.	Result	Test type	Species	Method
Dicyclopentyldimethylene diacrylate 42594-17-2	Sub-Category 1B (sensitising)	Freund's complete adjuvant test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Hydroxypropyl methacrylate 27813-02-1	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Hydroxypropyl methacrylate 27813-02-1	sensitising	Guinea pig maximisation test	guinea pig	not specified
Acrylic acid 79-10-7	not sensitising	Freund's complete adjuvant test	guinea pig	Klecak Method
Acrylic acid 79-10-7	not sensitising	Split adjuvant test	guinea pig	Maguire Method

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
Dicyclopentyldimethylene diacrylate 42594-17-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	negative	in vitro mammalian cell micronucleus test	with and without		OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Hydroxypropyl methacrylate 27813-02-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Hydroxypropyl methacrylate 27813-02-1	positive	in vitro mammalian chromosome aberration test	with and without		Chromosome Aberration Test
Hydroxypropyl methacrylate 27813-02-1	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Acrylic acid 79-10-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Acrylic acid 79-10-7	negative	mammalian cell gene mutation assay	with and without		equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Acrylic acid 79-10-7	negative	DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro	without		equivalent or similar to OECD Guideline 482 (Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells
Hydroxypropyl methacrylate 27813-02-1	negative	oral: gavage		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Hydroxypropyl methacrylate 27813-02-1	negative	oral: gavage		Drosophila melanogaster	not specified
Acrylic acid 79-10-7	negative	oral: gavage		rat	equivalent or similar to OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)
Acrylic acid 79-10-7	negative	oral: gavage		mouse	not specified

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
Hydroxypropyl methacrylate 27813-02-1	not carcinogenic	inhalation	2 y 6 h/d, 5 d/w	rat	male	equivalent or similar OECD Guideline 451 (Carcinogenicity Studies)
Acrylic acid 79-10-7	not carcinogenic	oral: drinking water	26 - 28 m continuously	rat	male/female	OECD Guideline 451 (Carcinogenicity Studies)
Acrylic acid 79-10-7	not carcinogenic	dermal	21 m 3 times/w	mouse	male/female	not specified

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
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	NOAEL P 1.000 mg/kg NOAEL F1 1.000 mg/kg		oral: gavage	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Hydroxypropyl methacrylate 27813-02-1	NOAEL P 300 mg/kg NOAEL F1 1.000 mg/kg	screening	oral: gavage	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Hydroxypropyl methacrylate 27813-02-1	NOAEL P 400 mg/kg NOAEL F1 400 mg/kg	two- generation study	oral: gavage	rat	OECD Guideline 416 (Two- Generation Reproduction Toxicity Study)
Acrylic acid 79-10-7	NOAEL P 83 mg/kg NOAEL F1 250 mg/kg	one- generation study	oral: drinking water	rat	equivalent or similar to OECD Guideline 415 (One- Generation Reproduction Toxicity Study)
Acrylic acid 79-10-7	NOAEL P 240 mg/kg NOAEL F1 53 mg/kg NOAEL F2 53 mg/kg	two- generation study	oral: drinking water	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
Dicyclopentyldimethylene diacrylate 42594-17-2	NOAEL 1.000 mg/kg	oral: gavage		rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	NOAEL 1.000 mg/kg	oral: gavage	daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Hydroxypropyl methacrylate 27813-02-1	NOAEL 300 mg/kg	oral: gavage	49 d daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Hydroxypropyl methacrylate 27813-02-1	NOAEL 0,352 mg/l	inhalation	90 d 6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Acrylic acid 79-10-7	NOAEL 40 mg/kg	oral: drinking water	12 m daily	rat	equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies)
Acrylic acid 79-10-7	NOAEL 0,015 mg/l	inhalation: vapour	90 d 6 h/d, 5 d/w	mouse	equivalent or similar to OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)

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.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Dicyclopentyldimethylene diacrylate 42594-17-2	LC50	1,65 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	LC50	16,4 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Hydroxypropyl methacrylate 27813-02-1	LC50	493 mg/l	48 h	Leuciscus idus melanotus	DIN 38412-15
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7	LC50	Toxicity > Water solubility'	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Acrylic acid 79-10-7	LC50	27 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	EPA OTS 797.1400 (Fish Acute Toxicity Test)
Acrylic acid 79-10-7	NOEC	>= 10,1 mg/l	45 d	Oryzias latipes	OECD Guideline 210 (fish early lite stage toxicity test)

Toxicity (Daphnia):

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Dicyclopentyldimethylene diacrylate 42594-17-2	EC50	2,36 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydroxypropyl methacrylate 27813-02-1	EC50	> 143 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7	EC50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Acrylic acid 79-10-7	EC50	95 mg/l	48 h	Daphnia magna	EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids)

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	Exposure time	Species	Method
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	NOEC	32 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Hydroxypropyl methacrylate 27813-02-1	NOEC	45,2 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7	NOEC	Toxicity > Water solubility	21 day	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Acrylic acid 79-10-7	NOEC	19 mg/l	21 d	Daphnia magna	EPA OTS 797.1330 (Daphnid Chronic Toxicity Test)

Toxicity (Algae):

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Dicyclopentyldimethylene diacrylate 42594-17-2	EC50	1,6 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Dicyclopentyldimethylene diacrylate 42594-17-2	EC10	0,64 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	EC50	> 100 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	NOEC	18,6 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroxypropyl methacrylate 27813-02-1	EC50	> 97,2 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroxypropyl methacrylate 27813-02-1	NOEC	> 97,2 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7	EC50	Toxicity > Water solubility	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7	NOEC	Toxicity > Water solubility	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Acrylic acid 79-10-7	EC10	0,03 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	EU Method C.3 (Algal Inhibition test)
Acrylic acid 79-10-7	EC50	0,13 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	EU Method C.3 (Algal Inhibition test)

Toxicity to microorganisms

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Hydroxypropyl methacrylate 27813-02-1	EC10	1.140 mg/l	16 h		not specified
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7	EC 50	> 100 mg/l	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Acrylic acid 79-10-7	EC20	900 mg/l	30 min	activated sludge, domestic	ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Dicyclopentyldimethylene diacrylate 42594-17-2	not readily biodegradable.	aerobic	28 %	28 day	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	readily biodegradable	aerobic	85 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
Hydroxypropyl methacrylate 27813-02-1	readily biodegradable	aerobic	94,2 %	28 d	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7	not readily biodegradable.	aerobic	1 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
Acrylic acid 79-10-7	inherently biodegradable	aerobic	100 %	28 d	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
Acrylic acid 79-10-7	readily biodegradable	aerobic	81 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)

12.3. Bioaccumulative potential

Hazardous substances	Bioconcentratio	Exposure time	Temperature	Species	Method
CAS-No.	n factor (BCF)				
Phenyl bis(2,4,6-	< 5				OECD Guideline 305 C
trimethylbenzoyl)-phosphine					(Bioaccumulation: Test for the
oxide					Degree of Bioconcentration in
162881-26-7					Fish)
Acrylic acid	3,16				QSAR (Quantitative Structure
79-10-7					Activity Relationship)

12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
Dicyclopentyldimethylene diacrylate 42594-17-2	4,6		OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	2,3		OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Hydroxypropyl methacrylate 27813-02-1	0,97	20 °C	not specified
Phenyl bis(2,4,6- trimethylbenzoyl)-phosphine oxide 162881-26-7	5,8		OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Acrylic acid 79-10-7	0,46	25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

12.5. Results of PBT and vPvB assessment

Hazardous substances	PBT / vPvB
CAS-No.	
Dicyclopentyldimethylene diacrylate	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very
42594-17-2	Bioaccumulative (vPvB) criteria.
2,2'-Ethylenedioxydiethyl dimethacrylate	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very
109-16-0	Bioaccumulative (vPvB) criteria.
Hydroxypropyl methacrylate	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very
27813-02-1	Bioaccumulative (vPvB) criteria.
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very
oxide	Bioaccumulative (vPvB) criteria.
162881-26-7	
Acrylic acid	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very
79-10-7	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

ADR	3082
RID	3082
ADN	3082
IMDG	3082
IATA	3082

14.2. UN proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
	((Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
	((Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
	((Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
	((Octahydro-4.7-methano-1H-indenediyl)bis(methylene) diacrylate)

IATA Environmentally hazardous substance, liquid, n.o.s. ((Octahydro-4,7-methano-1H-

indenediyl)bis(methylene) diacrylate)

14.3. Transport hazard class(es)

ADR	9
RID	9
ADN	9
IMDG	ç
IATA	ç

14.4. Packing 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

not applicable
Tunnelcode:
not applicable
not applicable
not applicable
not applicable

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

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

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

VOC content < 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:

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

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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