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

1.1. Product identifier

FotoDent splint

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

Use of the substance/preparation

Light-curing material for the production of dental splints by means of 3D printing processes

1.3. Details of the supplier of the safety data sheet

Address/Manufacturer

Dreve Dentamid GmbH
Max-Planck-Straße 31
DE-59423 Unna

Telephone no.	+49 2303 8807-0
Fax no.	+49 2303 8807-29
Information provided by / telephone	Department Research & Development: Fax: +49 2303 8807-562
E-mail address of person responsible for this SDS	sicherheitsdatenblatt@dreve.com

1.4. Emergency telephone number

Henkel Fire Department / 24h-Emergency-Contact-No.: +49 211 797-3350

SECTION 2: Hazards identification ***

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1A	H317
STOT SE 3	H335
Aquatic Chronic 2	H411

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
For explanation of abbreviations see section 16.

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Warning

Hazard statements

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

Precautionary statements ***

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405	Store locked up.
P501.1	Dispose of contents/container to industrial incineration plant.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains: Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide; Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate; Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole); 1,2-ethanediyl diacrylate; Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

2.3. Other hazards

No special hazards have to be mentioned.

The product contains no PBT substances. The product contains no vPvB substances. This product does not contain a substance that has endocrine disrupting properties with respect to human. The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

SECTION 3: Composition/information on ingredients ***

3.2. Mixtures

Hazardous ingredients ***

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

CAS No.	2136366-99-7				
EINECS no.	821-997-6				
Registration no.	01-2120758887-31				
Concentration	>=	25	<	50	%

Classification (Regulation (EC) No. 1272/2008)

Skin Sens. 1A	H317
Aquatic Chronic 2	H411

Acrylic Resin

Concentration	>=	10	<	25	%

Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2	H315
Eye Irrit. 2	H319

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

CAS No. 7534-94-3

EINECS no. 231-403-1
Registration no. 01-2119886505-27
Concentration >= 20 < 25 %
Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2	H315
Eye Irrit. 2	H319
STOT SE 3	H335
Aquatic Chronic 3	H412

Concentration limits (Regulation (EC) No. 1272/2008)

STOT SE 3	>= 10 %

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

CAS No. 52658-19-2
EINECS no. 412-260-6
Registration no. 01-2119381661-37
Concentration >= 10 < 25 %
Classification (Regulation (EC) No. 1272/2008)

Eye Irrit. 2	H319
Skin Sens. 1	H317
Aquatic Chronic 2	H411

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

CAS No. 162881-26-7
EINECS no. 423-340-5
Registration no. 01-2119489401-38
Concentration >= 1 < 10 %
Classification (Regulation (EC) No. 1272/2008)

Skin Sens. 1A	H317
Aquatic Chronic 4	H413

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

CAS No. 70356-09-1
EINECS no. 274-581-6
Registration no. 01-2119967408-25
Concentration >= 1 < 10 %
Classification (Regulation (EC) No. 1272/2008)

Aquatic Chronic 4	H413

1,2-ethanediyl diacrylate

CAS No. 2274-11-5
EINECS no. 218-886-4
Concentration >= 0,1 < 1 %
Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 3	H301
Acute Tox. 3	H311
Skin Irrit. 2	H315
Eye Dam. 1	H318
Skin Sens. 1	H317

ATE	oral	50	mg/kg
ATE	dermal	200	mg/kg

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated clothing immediately and dispose of safely. Adhere to personal protective measures when giving first aid

After inhalation

Remove the casualty into fresh air and keep him calm. In the event of symptoms take medical treatment.

After skin contact

After contact with skin, wash immediately with plenty of water and soap. Consult a doctor if skin irritation persists.

After eye contact

Separate eyelids, wash the eyes thoroughly with water (15 min.). Take medical treatment.

After ingestion

Call in a physician immediately and show him the Safety Data Sheet. Rinse mouth thoroughly with water. Let plenty of water be drunk in small gulps. Do not induce vomiting.

Adhere to personal protective measures when giving first aid

First aider: Pay attention to self-protection!

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

Until now no symptoms known so far.

4.3. Indication of any immediate medical attention and special treatment needed

Hints for the physician / hazards

In the case of swallowing with subsequent vomiting, aspiration of the lungs can occur which can lead to chemical pneumonia or asphyxiation.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Recommended: alcohol resistant foam, CO2, powders, water spray/mist, Extinguishing measures to suit surroundings

Non suitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of combustion evolution of dangerous gases possible.

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Do not inhale explosion and/or combustion gases. In case of combustion use a suitable breathing apparatus. Wear full protective suit.

Other information

Collect contaminated fire-fighting water separately, must not be discharged into the drains. Fire residues and contaminated fire-fighting water must be disposed of in accordance with the local regulations. Observe manufacturer's / distributor`s instructions.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep away sources of ignition. Ensure adequate ventilation. Use breathing apparatus if exposed to vapours/dust/aerosol. Avoid contact with skin, eyes and clothing. Use personal protective clothing. Refer to protective measures listed in Sections 7 and 8.

6.2. Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers). Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil. Retain and dispose of contaminated wash water. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

Pick up rest with suitable absorbent materials. Do not pick up with the help of saw-dust or other combustible substances. Clean contaminated floors and objects thoroughly, observing environmental regulations. Containers in which spilt substance has been collected must be adequately labelled. Dispose of as prescribed.

6.4. Reference to other sections

Refer to protective measures listed in Sections 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary). Avoid formation of aerosols. Avoid impact, friction and electro-static loading; risk of ignition! Keep container tightly closed.

Advice on protection against fire and explosion

Keep away from sources of heat and ignition. No smoking. Take action to prevent static discharges. Avoid impact and friction. Use only explosion-proof equipment. Keep away from combustible material. Wear shoes with conductive soles.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in original packaging, tightly closed. Storage rooms must be properly ventilated. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hints on storage assembly

Do not store together with foodstuffs. Do not store with strong oxidizing agents.

Further information on storage conditions

Keep under lock and key or accessible only to specialists or people who are authorized. Keep container tightly closed and in a well-ventilated place. Keep in a cool place

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Other information

Contains no substances with occupational exposure limit values.

Derived No/Minimal Effect Levels (DNEL/DMEL)

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	1,22	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	0,35	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	0,36	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	0,21	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	0,21	mg/kg/d

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

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	21	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	3	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	

Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	5,2	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	1,5	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	1,5	mg/kg/d

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	9,87	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	2,8	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	1,73	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	1	mg/person/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	1	mg/kg/d

Predicted No Effect Concentration (PNEC)

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Type of value	PNEC	
Type	Freshwater	
Concentration	2,33	µg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	1,2	mg/kg
Type of value	PNEC	
Type	Saltwater	
Concentration	0,233	µg/l
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,12	mg/kg
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	2,45	mg/l
Type of value	PNEC	
Type	Soil	
Concentration	0,239	mg/kg

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Type of value	PNEC	
Type	Freshwater	
Concentration	4,9	µg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,851	mg/kg
Type of value	PNEC	
Type	Saltwater	
Concentration	4,9	µg/l
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,0851	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	0,167	mg/kg
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	1	mg/kg

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

Type of value	PNEC	
Type	Freshwater	
Concentration	1	µg/l

Type of value	PNEC	
Type	Saltwater	
Concentration	1	µg/l
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	1	mg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,712	mg/kg
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,712	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	20	mg/kg

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Type of value	PNEC	
Type	Freshwater	
Concentration	1,8	µg/l
Type of value	PNEC	
Type	Saltwater	
Concentration	0,18	µg/l
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	19,52	mg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,526	mg/kg
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,053	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	0,104	mg/kg

8.2. Exposure controls

General protective and hygiene measures

Do not smoke during work time. Hold emergency shower available. Hold eye wash fountain available. Do not inhale gases/vapours/aerosols. Avoid contact with skin and eyes. Take off immediately all contaminated clothing. Do not eat or drink during work time. Storage of foodstuffs in work rooms is forbidden. Wash hands before breaks and after work. Clean skin thoroughly after work; apply skin cream.

Respiratory protection

Do not inhale vapours; Use suitable respiratory protective device in case of insufficient ventilation

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.
The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.
Gloves should be replaced regularly and if there is any sign of damage to the glove material.
Hand protection must comply with EN 374.
Appropriate Material nitrile

Eye protection

Safety glasses

Body protection

Clothing as usual in the chemical industry.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid		
Colour	colourless		
Odour	characteristic		
Melting point			
Remarks	not determined		
Freezing point			
Remarks	not determined		
Boiling point or initial boiling point and boiling range			
Value	>	100	°C
Flammability			
evaluation	not determined		
Upper and lower explosive limits			
Remarks	not determined		
Flash point			
Value		91	°C
Method	closed cup		
Auto-ignition temperature			
Remarks	not determined		
Decomposition temperature			
Remarks	not determined		
pH value			
Remarks	not determined		
Viscosity			
Remarks	not determined		
Solubility(ies)			
Remarks	not determined		
Partition coefficient n-octanol/water (log value)			
Remarks	not determined		
Vapour pressure			
Remarks	not determined		

Density and/or relative density

Value	1,09		g/cm³
Temperature	20	°C	

Relative vapour density

Remarks: not determined

9.2. Other information

Odour threshold

Remarks: not determined

Evaporation rate (ether = 1) :

Remarks: not determined

Solubility in water

Remarks: virtually insoluble

Explosive properties

evaluation: not determined

Oxidising properties

Remarks: not determined

Other information

None known

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reactions when stored and handled according to prescribed instructions.

10.2. Chemical stability

No hazardous reactions known.

10.3. Possibility of hazardous reactions

No hazardous reactions known.

10.4. Conditions to avoid

Protect from heat and direct sunlight

10.5. Incompatible materials

None known

10.6. Hazardous decomposition products

Irritant gases/vapours

SECTION 11: Toxicological information

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

Acute oral toxicity

ATE	>	10.000	mg/kg
Method	calculated value according to GHS (e.g see UN GHS)		

Acute oral toxicity (Components)

1,2-ethanediyl diacrylate

LD50		50	to	300	mg/kg

Acrylic Resin

LD50	>	2000	mg/kg

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

Species	rat		
LD50	>	2000	mg/kg
Method	OECD 401		

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

Species	rat		
LD50	>	16000	mg/kg
Method	OECD 401		

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Species	rat		
LD50	>	2000	mg/kg

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Species	rat		
LD50	>	2000	mg/kg
Method	EEC 84/449, B.1		

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Species	rat (female)		
LD50	>	2000	mg/kg
Method	OECD 423		

Acute dermal toxicity

ATE	>	10.000	mg/kg
Method	calculated value according to GHS (e.g see UN GHS)		

Acute dermal toxicity (Components)

1,2-ethanediyl diacrylate

LD50		200	to	1000	mg/kg

Acrylic Resin

LD50	>	2000	mg/kg

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

Species	rat		
LD50	>	2000	mg/kg
Method	OECD 402		

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Species	rat		
LD50	>	2000	mg/kg
Method	92/69/EEC, B.3		

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Species	rat		
LD50	>	2000	mg/kg
Method	OECD 402		

Acute inhalational toxicity

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

Acute inhalative toxicity (Components)

Acrylic Resin

LC50	>	5	mg/l
Duration of exposure		4 h	
Administration/Form	Dust/Mist		

Skin corrosion/irritation

evaluation	irritant
Remarks	The classification criteria are met.

Skin corrosion/irritation (Components)

1,2-ethanediyl diacrylate

evaluation	irritant

Acrylic Resin

evaluation	irritant

Serious eye damage/irritation

evaluation	irritant
Remarks	The classification criteria are met.

Serious eye damage/irritation (Components)

1,2-ethanediyl diacrylate

evaluation	irritant

Acrylic Resin

evaluation	irritant

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Species	rabbit
evaluation	irritant
Method	EEC 84/449, B.5

Sensitization

evaluation	May cause sensitization by skin contact.
Remarks	The classification criteria are met.

Sensitization (Components)

1,2-ethanediyl diacrylate

evaluation	A sensitization is possible for persons who are sensitive.

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

Route of exposure	dermal
Species	guinea pig
evaluation	sensitizing
Method	OECD 406

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Route of exposure	dermal
Species	guinea pig
evaluation	sensitizing

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Route of exposure	dermal
Species	mouse
evaluation	sensitizing
Method	OECD 429

Subacute, subchronic, chronic toxicity

Remarks	not determined

Mutagenicity

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

Reproductive toxicity

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

Carcinogenicity

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

Specific Target Organ Toxicity (STOT)

Single exposure

Remarks	The classification criteria are met.
evaluation	May cause respiratory irritation.

Repeated exposure

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

Specific Target Organ Toxicity (STOT) (Components)

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Single exposure

evaluation	May cause respiratory irritation. Route of exposure inhalative		
Species	rat		
NOAEL	100	ppm(m)	
Duration of exposure	90	d	

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties with respect to humans

The product does not contain a substance that has endocrine disrupting properties with respect to humans.

Experience in practice

Inhalation may lead to irritation of the respiratory tract.

Other information

No toxicological data are available.

SECTION 12: Ecological information

12.1. Toxicity

General information

not determined

Fish toxicity (Components)

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

Species	zebra fish (Brachydanio rerio)			
LC50	>	90		µg/l
Duration of exposure		96	h	
Method	OECD 203			

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

Species	carp (Cyprinus carpio)			
LC50	>	0,03		mg/l
Duration of exposure		96	h	
Remarks	The product is slightly soluble in the test medium. An eluate was tested.			

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Species	zebra fish (Brachydanio rerio)			
LC50		1,79		mg/l
Duration of exposure		96	h	
Method	OECD 203			

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Species	carp (Cyprinus carpio)		
LC50	4,9		mg/l
Duration of exposure	96	h	
Method	OECD 203		

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Species	zebra fish (Brachydanio rerio)		
LC50	1,8		mg/l
Duration of exposure	96	h	
Method	OECD 203		

Daphnia toxicity (Components)

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

Species	Daphnia magna		
EC50	> 1,175		µg/l
Duration of exposure	48	h	
Method	OECD 202		

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

Species	Daphnia magna		
NOEC	>= 8,1		µg/l
Duration of exposure	21	d	
Method	OECD 211		

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

Species	Daphnia magna		
EC50	> 0,03		mg/l
Duration of exposure	48	h	
Method	OECD 202		
Remarks	The product is slightly soluble in the test medium. An eluate was tested.		

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

Species	Daphnia magna		
NOEC	>= 3		µg/l
Duration of exposure	21	d	
Remarks	The product is slightly soluble in the test medium. An eluate was tested.		

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Species	Daphnia magna		
EC50	> 2,57		mg/l
Duration of exposure	48	h	
Method	OECD 202		

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Species	Daphnia magna		
NOEC	0,233		mg/l
Duration of exposure	21	d	
Method	OECD 211		

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Species	Daphnia magna		
NOEC	9,9		mg/l
Duration of exposure	48	h	
Method	OECD 202		

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Species	Daphnia magna		
EC50	26,37		mg/l
Duration of exposure	48	h	
Method	OECD 202		

Algae toxicity (Components)

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

Species	Scenedesmus subspicatus		
EC50	>	260	µg/l
Duration of exposure		72 h	
Method	OECD 201		

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

Species	Pseudokirchneriella subcapitata		
EC50	>	0,055	mg/l
Duration of exposure		96 h	
Method	OECD 201		
Remarks	The product is slightly soluble in the test medium. An eluate was tested.		

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Species	Pseudokirchneriella subcapitata		
NOEC		0,254	mg/l
Duration of exposure		21 d	
Method	OECD 201		

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Species	Pseudokirchneriella subcapitata		
EC50		33	mg/l
Duration of exposure		72 h	
Method	OECD 201		

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Species	Pseudokirchneriella subcapitata		
EC50		4,88	mg/l
Duration of exposure		72 h	
Method	OECD 201		

Bacteria toxicity (Components)

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

Species	activated sludge		
EC50	>	100	mg/l
Duration of exposure		3 h	
Method	OECD 209		

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

Species	activated sludge		
NOEC	>=	1000	mg/l
Duration of exposure		3 h	
Method	OECD 209		
Remarks	The product is slightly soluble in the test medium. An eluate was tested.		

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Species	activated sludge		
EC50	>	100	mg/l
Duration of exposure		3 h	
Method	OECD 209		

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Species	activated sludge		
NOEC		125	mg/l
Duration of exposure		3 h	
Method	OECD 209		

12.2. Persistence and degradability

General information

not determined

Biodegradability (Components)

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

Value	1			%
Duration of test	29	d		
evaluation	not readily degradable			
Method	OECD 301 B			

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

evaluation	not degradable

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

Value	70		%
Duration of test	28	d	
evaluation	Readily biodegradable (according to OECD criteria)		

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

Value	7	to	15	%
Duration of test	29	d		
evaluation	not readily degradable			
Method	OECD 301 B			

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

Value	43,5		%
Duration of test	10	d	
evaluation	Moderately/partially biodegradable		
Method	OECD 301F		

12.3. Bioaccumulative potential

General information

not determined

Partition coefficient n-octanol/water (log value)

Remarks	not determined

Octanol/water partition coefficient (log Pow) (Components)

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

log Pow	5,8

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

log Pow	5,09	
Method	OECD 117	

Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole)

log Pow	appr. 3,58	
Temperature	25	°C

1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-1,3-propanedione

log Pow	6,1	
Temperature	20	°C
Method	OECD 107	

12.4. Mobility in soil

General information

not determined

12.5. Results of PBT and vPvB assessment

General information

not determined

Results of PBT and vPvB assessment

The product contains no PBT substances
The product contains no vPvB substances.

12.6 Endocrine disrupting properties

Endocrine disrupting properties with respect to the envrionment

The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

General information

not determined

General information / ecology

Do not allow to enter soil, waterways or waste water canal. Avoid release into the atmosphere.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

Must not be disposed together with household garbage.
Dispose of waste according to applicable legislation.

Disposal recommendations for packaging

Packaging that cannot be cleaned should be disposed off as product waste.

SECTION 14: Transport information ***

	Land transport ADR/RID ***	Marine transport IMDG/GGVSee ***	Air transport ICAO/IATA ***
14.1. UN number or ID number	3082	3082	3082
14.2. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole), Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole), Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction products of 2-Propenoic acid (2 moles) and Neopentylglycol hydroxypivalate (1 mole), Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate)
14.3. Transport hazard class(es)	9	9	9
Label			
14.4. Packing group	III	III	III
Remarks	The product is not subject to any other provisions of ADR provided packaging of not more than 5 l / 5 kg	The product can be transported in accordance with IMDG Code paragraph 2.10.2.7, provided packaging not more than 5 l / 5 kg.	The product is not subject to any other provisions of IATA provided packaging of not more than 5 l / 5 kg (A197)
Limited Quantity	5 l	5 l	
Transport category	3		
14.5. Environmental hazards	-		
Tunnel restriction code	-		

SECTION 15: Regulatory information ***

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

Restriction according to annex XVII to regulation (EU) No 1907/2006

The product is subject to restrictions according to Annex XVII Regulation (EU) No. 1907/2006: Entry No. 3

Ingredients with restrictions according to Annex XVII Regulation (EU) No. 1907/2006 ***

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl methacrylate

The product is subject to restrictions according to Annex XVII Regulation (EU) No. 1907/2006: Entry-No.

75

Mixture of: 7,9,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-di-azahexadecane-1,16-diyl-prop-2-enoate; 7,7,9-Trimethyl-3,14-dioxa-4,13-dioxo-5,12-diazahexadecane-1,16-diylprop-2-enoate

The product is subject to restrictions according to Annex XVII Regulation (EU) No. 1907/2006: Entry-No. 75

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1A	H317	Calculation method
STOT SE 3	H335	Calculation method
Aquatic Chronic 2	H411	Calculation method

Hazard statements listed in Chapter 2/3

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

CLP categories listed in Chapter 2/3

Acute Tox. 3	Acute toxicity, Category 3
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic, Category 3
Aquatic Chronic 4	Hazardous to the aquatic environment, chronic, Category 4
Eye Dam. 1	Serious eye damage, Category 1
Eye Irrit. 2	Eye irritation, Category 2
Skin Irrit. 2	Skin irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
Skin Sens. 1A	Skin sensitization, Category 1A
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.