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

1.1 Product identifier

Trade name

VarseoWax® CAD/Cast (REF 41136, 41137)

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

Relevant identified uses of the substance or mixture
Photopolymer intended for use in the manufacture of burnout, removable prostheses, crowns, bridges, inlays and onlays.

Uses advised against
No data available.

1.3 Details of the supplier of the safety data sheet

Address
BEGO Bremer Goldschlägerei
Wilh. Herbst GmbH & Co. KG
Wilhelm-Herbst-Str. 1
28359 Bremen

Telephone no. +49/ 421/ 2028 – 0
Fax no. +49/ 421/ 2028 – 115
e-mail msds@bego.com

Information provided by / telephone
Research & Development Department - Materials, alloys and ceramics; +49/ 421/ 2028 – 130 (Chief Development Officer alloys)

Advice on Safety Data Sheet
msds@bego.com

1.4 Emergency telephone number

For medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)
Aquatic Chronic 2; H411
Skin Sens. 1; H317

Classification information
This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:
Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP
Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)

Hazard pictograms

GHS07

GHS09

Signal word
Warning

Hazardous component(s) to be indicated on label:
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate
(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

Hazard statement(s)

H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Hazard statements (EU)

EUH208	Contains Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.',.alpha."-1,2,3 propanetriyltris[.omega.-[(1-oxo-2-propenyl)oxy]-, Phenol, 4,4´-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane, 2-propenoate. May produce an allergic reaction.

Precautionary statement(s)

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

2.3 Other hazards

No data available.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable. The product is not a substance.

3.2 Mixtures

Hazardous ingredients

No	Substance name		Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration	%
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**			
	72869-86-4 276-957-5 - 01-2120751202-68	Aquatic Chronic 2; H411 Skin Sens. 1B; H317	>= 25.00 - < 50.00	%-b.w.
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**			
	42594-17-2 255-901-3 - 01-2120051112-76	Aquatic Chronic 2; H411 Skin Sens. 1B; H317	>= 25.00 - < 50.00	%-b.w.
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**			
	162881-26-7 423-340-5 015-189-00-5 01-2119489401-38	Aquatic Chronic 4; H413 Skin Sens. 1; H317	< 2.50	%-b.w.
4	**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.',.alpha."-1,2,3 propanetriyltris[.omega.-[(1-oxo-2-propenyl)oxy]-**			
	52408-84-1 - - -	Eye Irrit. 2; H319 Skin Sens. 1; H317	< 0.50	%-b.w.
5	**Phenol, 4,4´-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane, 2-propenoate**			
	55818-57-0 500-130-2 - 01-2119490020-53	Skin Sens. 1; H317	< 0.50	%-b.w.

Full Text for all H-phrases and EUH-phrases: pls. see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
In case of allergic symptoms, especially respiratory tract related, seek medical help immediately.

After inhalation
Ensure supply of fresh air. Remove affected person from the immediate area. When vapours are intensively inhaled, seek medical help immediately.

After skin contact
Wash off immediately with soap and water. Get medical attention if pain still persists.

After eye contact
Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Seek medical assistance.

After ingestion
Rinse mouth thoroughly with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Carbon dioxide; Dry chemical extinguisher; Water spray jet; Foam

Unsuitable extinguishing media
High power water jet

5.2 Special hazards arising from the substance or mixture

Combustible. In the event of fire, the following can be released: carbon oxides (COx); Nitrogen oxides (NOx); phosphoric compounds

5.3 Advice for firefighters

Use self-contained breathing apparatus. Wear full protective suit. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Ensure adequate ventilation. Do not inhale vapours. Refer to protective measures listed in sections 7 and 8.

For emergency responders
No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Collect contaminated water / firefighting water separately. Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g., sand, kieselguhr, universal binder). When collected, handle material as described under the section heading "Disposal considerations".

6.4 Reference to other sections

Information regarding safe handling, see chapter 7. Information regarding personal protective measures, see chapter 8. Information regarding waste disposal, see chapter 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Provide good ventilation at the work area (local exhaust ventilation, if necessary).

General protective and hygiene measures
Wash hands before breaks and after work. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Keep away from foodstuffs and beverages. Do not inhale vapours. Provide eye wash fountain in work area. Have emergency shower available.

Advice on protection against fire and explosion
Keep away from sources of ignition. Take precautionary measures against static charges.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a well-ventilated place.

Requirements for storage rooms and vessels
Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep only in the original container.

Incompatible products
Do not store together with: explosive substances; oxidizing agents

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

DNEL, DMEL and PNEC values

DNEL values (worker)

No	Substance name			CAS / EC no	
	Route of exposure	Exposure time	Effect	Value	
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**			**72869-86-4** **276-957-5**	
	dermal	Long term (chronic)	systemic	1.3	mg/kg/day
	inhalative	Long term (chronic)	systemic	3.3	mg/m³
2	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**			**162881-26-7** **423-340-5**	
	dermal	Long term (chronic)	systemic	3	mg/kg/day
	inhalative	Long term (chronic)	systemic	21	mg/m³

DNEL value (consumer)

No	Substance name			CAS / EC no	
	Route of exposure	Exposure time	Effect	Value	
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**			**72869-86-4** **276-957-5**	
	oral	Long term (chronic)	systemic	0.3	mg/kg/day
	dermal	Long term (chronic)	systemic	0.7	mg/kg/day
	inhalative	Long term (chronic)	systemic	0.6	mg/m³
2	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**			**162881-26-7** **423-340-5**	
	oral	Long term (chronic)	systemic	1.5	mg/kg/day
	dermal	Long term (chronic)	systemic	1.5	mg/kg/day
	inhalative	Long term (chronic)	systemic	5.2	mg/m³

PNEC values

No	Substance name		CAS / EC no
	ecological compartment	Type	Value

1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**		**72869-86-4** **276-957-5**	
	water	fresh water	0.01	mg/L
	water	Aqua intermittent	0.1	mg/kg
	water	marine water	0.001	mg/L
	water	fresh water sediment	4.56	mg/kg dry weight
	water	marine water sediment	0.46	mg/kg dry weight
	soil	-	0.91	mg/kg dry weight
	sewage treatment plant	-	3.61	mg/L
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**		**42594-17-2** **255-901-3**	
	water	fresh water	1.6	µg/L
	water	Aqua intermittent	16	µg/L
	water	marine water	0.16	µg/L
	water	fresh water sediment	0.658	mg/kg dry weight
	water	marine water sediment	0.066	mg/kg dry weight
	soil	-	0.131	mg/kg dry weight
	sewage treatment plant	-	10	mg/L
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**		**162881-26-7** **423-340-5**	
	water	fresh water	1	µg/L
	water	Aqua intermittent	1	µg/L
	water	marine water	1	µg/L
	water	fresh water sediment	0.712	mg/kg dry weight
	water	marine water sediment	0.712	mg/kg dry weight
	soil	-	20	mg/kg dry weight
	sewage treatment plant	-	1	mg/L

8.2 Exposure controls

Appropriate engineering controls
Ensure adequate ventilation, local exhaust at the work station if necessary.

Personal protective equipment

Respiratory protection
If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

Eye / face protection
Safety glasses with side protection shield (EN 166)

Hand protection
In case of thermal processing, thermally insulating protective gloves are to be used. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Other
Normal chemical work clothing.

Environmental exposure controls
Do not empty into drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form/Colour
liquid, viscous
yellow

Odour
No data available

Odour threshold
No data available

pH value
No data available

Boiling point / boiling range
No data available

Melting point / melting range
No data available

Decomposition point / decomposition range
No data available

Flash point
No data available

Auto-ignition temperature
No data available

Oxidising properties
No data available

Explosive properties
No data available

Flammability (solid, gas)
No data available

Lower flammability or explosive limits
No data available

Upper flammability or explosive limits
No data available

Vapour pressure
No data available

Vapour density
No data available

Evaporation rate
No data available

Relative density
No data available

Density			
Value		1.10	g/ml
Source	supplier		

Solubility in water
No data available

Solubility(ies)
No data available

Partition coefficient: n-octanol/water					
No	**Substance name**	**CAS no.**		**EC no.**	
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**		**276-957-5**	
log Pow			3.39		
Reference temperature			20		°C
Method	OECD 117				
Source	ECHA				
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**		**255-901-3**	
log Pow	4.54	-	4.64		
with reference to	pH 7,3				
Method	OECD 117				
Source	ECHA				
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**		**423-340-5**	
log Pow			5.8		
Reference temperature			22		°C
with reference to	pH: 8.3				
Method	OECD 117				
Source	ECHA				

Viscosity				
Value	700	-	1500	mPa*s
Reference temperature			22	°C
Method	Brookfield			
Source	supplier			

9.2 Other information

Other information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Dangerous reactions are not expected if the product is handled according to its intended use.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions

None, when used as directed.

10.4 Conditions to avoid

Heat, naked flames and other ignition sources.

10.5 Incompatible materials

strong oxidizing agents

10.6 Hazardous decomposition products

None if stored, handled and transported properly. In case of fire: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity				
No	**Substance name**	**CAS no.**	**EC no.**	
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**	
LD50	>		5000	mg/kg bodyweight
Species	rat			
Method	OECD 401			
Source	ECHA			

2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**		**255-901-3**
LD50	>	2000	mg/kg bodyweight	
Species	rat			
Method	OECD 423			
Source	ECHA			
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**		**423-340-5**
LD50	>	2000	mg/kg bodyweight	
Species	rat			
Method	OECD 401			
Source	ECHA			

Acute dermal toxicity				
No	**Substance name**	**CAS no.**		**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**		**276-957-5**
LD50	>	2000	mg/kg bodyweight	
Species	rat			
Method	OECD 402			
Source	ECHA			
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**		**255-901-3**
LD50	>	2000	mg/kg bodyweight	
Species	rat			
Method	OECD 402			
Source	ECHA			
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**		**423-340-5**
LD50	>	2000	mg/kg bodyweight	
Species	rat			
Method	OECD 402			
Source	ECHA			

Acute inhalational toxicity
No data available

Skin corrosion/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**
Species	rabbit		
Method	OECD 404		
Source	ECHA		
Evaluation	non-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**	**255-901-3**
Method	OECD 439		
Source	ECHA		
Evaluation	non-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**	**423-340-5**
Species	rabbit		
Method	OECD 404		
Source	ECHA		
Evaluation	non-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Serious eye damage/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**
Species	rabbit		

Method	OECD 405
Source	ECHA
Evaluation	non-irritant
Evaluation/classification	Based on available data, the classification criteria are not met.
2 (octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate 42594-17-2 255-901-3	
Method	OECD 437
Source	ECHA
Evaluation	non-irritant
Evaluation/classification	Based on available data, the classification criteria are not met.
3 phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide 162881-26-7 423-340-5	
Species	rabbit
Method	OECD 405
Source	ECHA
Evaluation	non-irritant
Evaluation/classification	Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**
Route of exposure	Skin		
Species	mouse		
Method	OECD 429		
Source	ECHA		
Evaluation	sensitizing		
Evaluation/classification	Based on available data, the classification criteria are met.		
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**	**255-901-3**
Route of exposure	Skin		
Species	guinea pig		
Method	OECD 406		
Source	ECHA		
Evaluation	sensitizing		
Evaluation/classification	Based on available data, the classification criteria are met.		
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**	**423-340-5**
Route of exposure	Skin		
Species	guinea pig		
Method	OECD 406		
Source	ECHA		
Evaluation	sensitizing		
Evaluation/classification	Based on available data, the classification criteria are met.		

Germ cell mutagenicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**
Type of examination	in vitro gene mutation study in bacteria		
Species	Salmonella typhimurium TA98, TA100, TA102, TA1535, TA1537		
Method	OECD 471		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
Type of examination	in vitro gene mutation study in mammalian cells		
Species	Chinese hamster V79 cells		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**	**255-901-3**
Type of examination	in vitro gene mutation study in mammalian cells		
Species	Chinese hamster V79 cells		
Method	OECD 476		

Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.
Type of examination	in vitro gene mutation study in bacteria
Species	Salmonella typhimurium TA98, TA100, TA102, TA1535, TA1537
Method	OECD 471
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.
Type of examination	In vitro mammalian cytogenicity
Species	Mouse lymphoma cells
Method	OECD 487
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.
3 phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide 162881-26-7 423-340-5	
Type of examination	in vitro gene mutation study in bacteria
Species	Salmonella typhimurium / Escherichia coli
Method	OECD 471
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.
Type of examination	In vitro Mammalian Chromosomal Aberration Test
Species	Human Lymphocyte
Method	OECD 473
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.
Type of examination	In vitro mammalian cell gene mutation test
Species	Mouse lymphoma cells
Method	OECD 476
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.

Reproduction toxicity

No	Substance name	CAS no.	EC no.
1	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate	72869-86-4	276-957-5
Route of exposure	oral		
Type of examination	Toxicity study		
Species	rat		
Method	OECD 422		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	42594-17-2	255-901-3
Route of exposure	oral		
Type of examination	Toxicity study		
Species	rat		
Method	OECD 421		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
3	phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	423-340-5
Route of exposure	oral		
Type of examination	Prenatal Developmental Toxicity Study		
Species	rat		
Method	OECD 414		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Carcinogenicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No	Substance name	CAS no.	EC no.
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**
Route of exposure	oral		
Species	rat		
Method	OECD 422		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**	**255-901-3**
Route of exposure	oral		
Species	rat		
Method	OECD 407		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**	**423-340-5**
Route of exposure	oral		
Species	rat		
Method	OECD 407		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Aspiration hazard
No data available

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**
LC50		10.1	mg/l
Duration of exposure		96	h
Species	Danio rerio		
Method	OECD 203		
Source	ECHA		
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**	**255-901-3**
LC50		1.65	mg/l
Duration of exposure		96	h
Species	Danio rerio		
Method	OECD 203		
Source	ECHA		
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**	**423-340-5**
LC50	>	90	µg/l
Duration of exposure		96	h
Species	Danio rerio		
Method	OECD 203		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Toxicity to fish (chronic)
No data available

Toxicity to Daphnia (acute)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**
EC50	>	1.2	mg/l
Duration of exposure		48	h
Species	Daphnia magna		

Method		OECD 202		
Source		ECHA		
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**		**255-901-3**
EC50			2.36	mg/l
Duration of exposure			48	h
Species		Daphnia magna		
Method		OECD 202		
Source		ECHA		
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**		**423-340-5**
EC50		>	1175	µg/l
Duration of exposure			48	h
Species		Daphnia magna		
Method		OECD 202		
Source		ECHA		
Evaluation/classification		Based on available data, the classification criteria are not met.		

Toxicity to Daphnia (chronic)
No data available

Toxicity to algae (acute)				
No	**Substance name**	**CAS no.**		**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**		**276-957-5**
EC50		>	0.68	mg/l
Duration of exposure			72	h
Species		Desmodesmus subspicatus		
Method		OECD 201		
Source		ECHA		
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**		**255-901-3**
EC50			1.6	mg/l
Duration of exposure			72	h
Species		Pseudokirchneriella subcapitata		
Method		OECD 201		
Source		ECHA		
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**		**423-340-5**
EC50		>	260	µg/l
Duration of exposure			72	h
Species		Desmodesmus subspicatus		
Method		OECD 201		
Source		ECHA		
Evaluation/classification		Based on available data, the classification criteria are not met.		

Toxicity to algae (chronic)
No data available

Bacteria toxicity
No data available

12.2 Persistence and degradability

Biodegradability				
No	**Substance name**	**CAS no.**		**EC no.**
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**		**276-957-5**
Type		aerobic biodegradation		
Value			22	%
Duration			28	day(s)
Method		OECD 301 B		
Source		ECHA		
Evaluation		not readily biodegradable		
2	**(octahydro-4,7-methano-1H-**	**42594-17-2**		**255-901-3**

	indenediyl)bis(methylene) diacrylate			
Type	aerobic biodegradation			
Value		28.1	%	
Duration		28		
Method	OECD 301 F			
Source	ECHA			
Evaluation	Potentially biologically degradable (inherently biodegradable).			
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**	**423-340-5**	
Type	aerobic biodegradation			
Value		1	%	
Duration		28	day(s)	
Method	OECD 301 B			
Source	ECHA			
Evaluation	not readily biodegradable			

Abiotic Degration				
No	**Substance name**	**CAS no.**	**EC no.**	
1	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**	**255-901-3**	
Type	Hydrolysis			
Half-life		4	day(s)	
pH value		1.2		
Reference temperature		37	°C	
Method	OECD 111			
Source	ECHA			
Type	Hydrolysis			
Half-life		4.8	day(s)	
pH value		9		
Reference temperature		50	°C	
Method	OECD 111			
Source	ECHA			

12.3 Bioaccumulative potential

Bioconcentration factor (BCF)				
No	**Substance name**	**CAS no.**	**EC no.**	
1	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**	**423-340-5**	
BCF	<	5		
Species	Cyprinus carpio			
Method	OECD 305			
Source	ECHA			

Partition coefficient: n-octanol/water				
No	**Substance name**	**CAS no.**	**EC no.**	
1	**7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate**	**72869-86-4**	**276-957-5**	
log Pow		3.39		
Reference temperature		20	°C	
Method	OECD 117			
Source	ECHA			
2	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**	**255-901-3**	
log Pow	4.54 -	4.64		
with reference to	pH 7,3			
Method	OECD 117			
Source	ECHA			
3	**phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**	**162881-26-7**	**423-340-5**	
log Pow		5.8		
Reference temperature		22	°C	
with reference to	pH: 8.3			
Method	OECD 117			

Source	ECHA

12.4 Mobility in soil

Mobility in soil			
No	**Substance name**	**CAS no.**	**EC no.**
1	**(octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate**	**42594-17-2**	**255-901-3**
log Koc	3.61		
Method	OECD 121		
Source	ECHA		

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.
Disposal of the product should be carried out in accordance with all applicable regulations following consultation with the responsible local authority and the disposal company in an authorised and suitable disposal facility.

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

Class	9
Classification code	M6
Packing group	III
Hazard identification no.	90
UN number	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate (octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate
Tunnel restriction code	-
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.2 Transport IMDG

Class	9
Packing group	III
UN number	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate (octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate
EmS	F-A, S-F
Label	9
Marine pollutant mark	Symbol "fish and tree"

14.3 Transport ICAO-TI / IATA

Class	9
Packing group	III

UN number	UN3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Technical name	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate (octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.4 Other information
No data available.

14.5 Environmental hazards
Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user
To be transported always in closed, upright and safe containers. Make sure that persons handling these containers are aware of the rules of conduct in case of incident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not relevant

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)
According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation
According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES	
The product is considered being subject to REACH regulation (EC) 1907/2006 annexe XVII.	No 3

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances	
This product is subject to Part I of Annex I, risk category:	E2

Other regulations
Adhere to the national sanitary and occupational safety regulations when using this product.

15.2 Chemical safety assessment
A chemical safety assessment has not been carried out for this mixture.

SECTION 16: Other information

Sources of key data used to compile the data sheet:
Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.
EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU
National Threshold Limit Values of the corresponding countries as amended in each case.
Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.
The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

H319	Causes serious eye irritation.

H413	May cause long lasting harmful effects to aquatic life.

Department issuing safety data sheet
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This information is based on our present knowledge and experience.
The safety data sheet describes products with a view to safety requirements.
It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

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