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Safety data sheet

BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.
Date / Revised: 20.07.2020 Version: 1.0
Date previous version: not applicable Previous version: none
Product: **Ultracur3D® DM 2505 Dental Model**
(ID no. 11131793/SDS_GEN_EU/EN)
Date of print 29.01.2021

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

1.1. Product identifier

Ultracur3D® DM 2505 Dental Model

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

Recommended use: resin, Printing inks, Chemical

1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Telephone: +49 621 60-0
E-mail address: global.info@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

For the classification of the mixture the following methods have been applied: extrapolation on the concentration levels of the hazardous substances, on basis of test results and after evaluation of experts. The methodologies used are mentioned at the respective test results.

According to Regulation (EC) No 1272/2008 [CLP]

Skin Corr./Irrit. 2	H315 Causes skin irritation.
Eye Dam./Irrit. 1	H318 Causes serious eye damage.
STOT RE 2 (oral)	H373 May cause damage to organs through prolonged or repeated oral exposure.
Skin Sens. 1B	H317 May cause an allergic skin reaction.
Aquatic Chronic 2	H411 Toxic to aquatic life with long lasting effects.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System, EU (GHS)

Pictogram:

Signal Word:
Danger

Hazard Statement:

H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs through prolonged or repeated oral exposure.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves and eye protection or face protection.
P273	Avoid release to the environment.
P260	Do not breathe dust/gas/mist/vapours.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: 2-Propen-1-one, 1-(4-morpholinyl)-, diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide, (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate, 2,2-bis(acryloyloxymethyl)butyl acrylate, 2,2'-Ethylenedioxydiethyl dimethacrylate

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

Preparation based on: urethane, acrylates, Polymer

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

5-Ethyl-1,3-dioxane-5-methanol

Content (W/W): >= 0 % - < 3 %	Eye Dam./Irrit. 2
CAS Number: 5187-23-5	H319
EC-Number: 225-967-8	

2,2-bis(acryloyloxymethyl)butyl acrylate

Content (W/W): >= 10 % - < 20 %	Skin Corr./Irrit. 2
CAS Number: 15625-89-5	Eye Dam./Irrit. 2
EC-Number: 239-701-3	Skin Sens. 1
REACH registration number: 01-2119489896-11	Aquatic Acute 1
	Aquatic Chronic 1
INDEX-Number: 607-111-00-9	M-factor acute: 1
	H319, H315, H317, H400, H410

Oxybis(methyl-2,1-ethanediyl) diacrylate

Content (W/W): >= 3 % - < 7 %	Skin Corr./Irrit. 2
CAS Number: 57472-68-1	Eye Dam./Irrit. 1
EC-Number: 260-754-3	Skin Sens. 1
REACH registration number: 01-2119484629-21	H318, H315, H317

diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide

Content (W/W): >= 1 % - < 3 %	Skin Sens. 1B
CAS Number: 75980-60-8	Repr. 2 (fertility)
EC-Number: 278-355-8	Repr. 2 (unborn child)
	Aquatic Chronic 2
	H317, H361fd, H411

(5-Ethyl-1,3-dioxan-5-yl)methyl acrylate

Content (W/W): >= 20 % - < 50 %	Skin Corr./Irrit. 2
CAS Number: 66492-51-1	Skin Sens. 1B
EC-Number: 266-380-7	Aquatic Chronic 2
REACH registration number: 01-2119976303-36	H315, H317, H411

2,2'-Ethylenedioxydiethyl dimethacrylate

Content (W/W): >= 3 % - < 20 %	Skin Sens. 1
CAS Number: 109-16-0	H317
EC-Number: 203-652-6	
REACH registration number: 01-2119969287-21	

Polymeric urethane acrylate

Content (W/W): >= 3 % - < 5 %	Skin Corr./Irrit. 2
CAS Number: 52404-33-8	Eye Dam./Irrit. 2
	H319, H315

2-Propen-1-one, 1-(4-morpholinyl)-

Content (W/W): >= 15 % - < 20 %	Acute Tox. 4 (oral)
CAS Number: 5117-12-4	Eye Dam./Irrit. 1
EC-Number: 418-140-1	Skin Sens. 1
INDEX-Number: 613-222-00-3	STOT RE 2
	H318, H302, H317, H373

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam

Unsuitable extinguishing media for safety reasons:
water jet

5.2. Special hazards arising from the substance or mixture

Self-polymerization if overheated in a container.

harmful vapours
Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus.

Further information:
Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure build up due to heat. Contaminated extinguishing water must be disposed of in accordance with official regulations. In case of a fire in the vicinity a restabilization system should be used if the temperature in the storage container reaches 45°C. Evacuate area of all unnecessary personnel. In case of a fire in the vicinity evacuate all personnel in a greater area if the temperature in the storage container reaches 60°C.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Take appropriate protective measures. Avoid contact with the skin, eyes and clothing. Ensure adequate ventilation. Use personal protective clothing. Breathing protection required. Avoid all sources of ignition: heat, sparks, open flame.

6.2. Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. The substance/ product may be handled only by appropriately trained personnel. Ensure thorough ventilation of stores and work areas. Encapsulation or exhaust ventilation required. When filling, transferring, or emptying of containers, adequate local exhaust ventilation is necessary. Vent waste air to atmosphere only through suitable separators. Do not open warm or swollen product containers. Remove persons to safety and alert fire brigade. Because of the possible separation from the stabilizer the product should never be partially melted and taken. Ensure that there is no crystallized product in the container before use. Ensure adequate inhibitor and dissolved oxygen level. The temperatures which must be avoided are to be considered. Protect against heat. Protect from direct sunlight. Protect contents from the effects of light.

Protection against fire and explosion:
Substance/product can form explosive mixture with air. It is recommended that all conductive parts of the machinery are grounded. Ground all transfer equipment properly to prevent electrostatic

discharge. Containers should be grounded against electrostatic charge. Avoid all sources of ignition: heat, sparks, open flame. Vapours may form ignitable mixture with air. If exposed to fire, keep containers cool by spraying with water. Emergency cooling must be provided for the eventuality of a fire in the vicinity. Heated containers should be cooled to prevent polymerization. Sealed containers should be protected against heat as this results in pressure build-up. Avoid influence of heat.

7.2. Conditions for safe storage, including any incompatibilities

The product in undamaged packing need not be stored separately.
Further information on storage conditions: Protect against heat. Protect from the effects of light. The stabilizer is only effective in the presence of oxygen.

Protect from temperatures below: -15 °C
Protect from temperatures above: 40 °C

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for higher concentrations or long-term effect: Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:
Chemical resistant protective gloves (EN 374)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):
nitrile rubber (NBR) - 0.4 mm coating thickness
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Under no circumstances should the product come into contact with the skin of pregnant women or be inhaled by them. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with the skin, eyes and clothing. Avoid inhalation. Gloves must be inspected regularly and

prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Store work clothing separately.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	Liquid with bottom solids	
Colour:	beige	
Odour:	acrylic-like	
Odour threshold:		
	Not determined due to potential health hazard by inhalation.	
pH value:		
	not determined	
Melting point:		
	No data available.	
Boiling point:		
	No data available.	
Flash point:	> 100 °C	
Evaporation rate:		
	No data available.	
Flammability:	not highly flammable	(derived from flash point)
Lower explosion limit:		
	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:		
	For liquids not relevant for classification and labelling.	
Ignition temperature:		
	No data available.	
Vapour pressure:		
	No data available.	
Density:	1.1 g/cm3 (20 °C)	
Relative vapour density (air):		
	not determined	
Solubility in water:	sparingly soluble	
Solubility (qualitative) solvent(s):	organic solvents soluble	
Partitioning coefficient n-octanol/water (log Kow):		
	not applicable for mixtures	
Thermal decomposition:	195 °C, 354 kJ/kg, Reaction heat in case of polymerization	
Viscosity, dynamic:	65 mPa.s (30 °C)	

Explosion hazard: not explosive
Fire promoting properties: not fire-propagating

9.2. Other information

Self heating ability: not applicable, the product is a liquid

Hygroscopy: hygroscopic
Other Information:
If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: Corrosive effects to metal are not anticipated.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
Explosion and fire hazard exists under confined conditions. Ignitable air mixtures can form when the product is heated above the flash point and/or when sprayed or atomized. Formation of explosive gas/air mixtures. Reacts with peroxides and other radical components.

Risk of spontaneous polymerization when heated or in the presence of UV radiation. Polymerization coupled with heat formation. Radical formation can cause exothermic polymerization. Risk of spontaneous polymerization in the presence of radical donors.

10.4. Conditions to avoid
Avoid heat. Avoid UV-light and other radiation with high energy. Avoid direct sunlight. Avoid prolonged storage. Avoid inhibitor loss.

10.5. Incompatible materials

Substances to avoid:
radical formers, free radical initiators, peroxides, mercaptans, nitro-compounds, azides, aldehydes, ether, ketones, nitrites, nitrates, oxidizing agents, reducing agents, strong bases, acid anhydrides, acid chlorides, metal salts, mineral acids, Inert gas

10.6. Hazardous decomposition products

Hazardous decomposition products:
Gaseous products of degradation can be given off if the product is greatly overheated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation.

Experimental/calculated data:
ATE (oral): > 2,000 mg/kg

ATE (by inhalation): > 20 mg/l 4 h
Determined for vapor

ATE (by inhalation): > 5 mg/l 4 h
Determined for mist

ATE (dermal): > 5,000 mg/kg

Information on: 2-Propen-1-one, 1-(4-morpholinyl)-

Experimental/calculated data:
LD50 rat (oral): 588 mg/kg (OECD Guideline 401)

Irritation

Assessment of irritating effects:
Skin contact causes irritation. May cause severe damage to the eyes.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Assessment of irritating effects:
Not irritating to the eyes. Causes skin irritation.

Information on: 2-Propen-1-one, 1-(4-morpholinyl)-
Assessment of irritating effects:
May cause severe damage to the eyes. EU-classification Not irritating to the skin.

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Assessment of irritating effects:
Eye contact causes irritation. Skin contact causes irritation.

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Assessment of irritating effects:
Skin contact causes irritation. May cause severe damage to the eyes.

Information on: 5-Ethyl-1,3-dioxane-5-methanol

Assessment of irritating effects:
Eye contact causes irritation. Not irritating to the skin.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant. (Draize test)

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Experimental/calculated data:
Serious eye damage/irritation rabbit: Irritant. (Draize test)

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Experimental/calculated data:
Serious eye damage/irritation rabbit: irreversible damage (OECD Guideline 405)

Information on: 5-Ethyl-1,3-dioxane-5-methanol
Experimental/calculated data:
Serious eye damage/irritation: Irritant.

Respiratory/Skin sensitization

Assessment of sensitization:
Sensitization after skin contact possible.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Assessment of sensitization:
Caused skin sensitization in animal studies.

Information on: 2-Propen-1-one, 1-(4-morpholinyl)-
Assessment of sensitization:
Sensitization after skin contact possible. EU-classification

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Assessment of sensitization:
Caused skin sensitization in animal studies.

Information on: 2,2'-Ethylenedioxydiethyl dimethacrylate
Assessment of sensitization:
Sensitization after skin contact possible.

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Assessment of sensitization:
Sensitization after skin contact possible.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Assessment of sensitization:
Caused skin sensitization in animal studies.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Experimental/calculated data:
Mouse Local Lymph Node Assay (LLNA) mouse: skin sensitizing (OECD Guideline 429)

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Experimental/calculated data:
Guinea pig maximization test guinea pig: skin sensitizing (similar to OECD guideline 406)

Information on: 2,2'-Ethylenedioxydiethyl dimethacrylate
Experimental/calculated data:
Guinea pig maximization test guinea pig: sensitizing *(other)*

In vitro assay: skin sensitizing (other)

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Experimental/calculated data:
Mouse Local Lymph Node Assay (LLNA) mouse: skin sensitizing (OECD Guideline 429)

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Experimental/calculated data:
Mouse Local Lymph Node Assay (LLNA) mouse: skin sensitizing (OECD Guideline 429)

Germ cell mutagenicity

Assessment of mutagenicity:
Based on the ingredients, there is no suspicion of a mutagenic effect.

Carcinogenicity

Assessment of carcinogenicity:
The whole of the information assessable provides no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity:
Based on available Data, the classification criteria are not met. Contains a component that causes reproductive toxicity in test animals.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide

Assessment of reproduction toxicity:
The results of animal studies suggest a fertility impairing effect.

Developmental toxicity

Assessment of teratogenicity:
Based on available Data, the classification criteria are not met. Contains a component that causes teratogenicity in test animals.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Assessment of teratogenicity:
At high doses there are indications of a developmental effect.

Specific target organ toxicity (single exposure)

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

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
Repeated exposure may affect certain organs.

Information on: 2-Propen-1-one, 1-(4-morpholinyl)-
Assessment of repeated dose toxicity:
Repeated exposure may affect certain organs. EU-classification
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Aspiration hazard

No aspiration hazard expected.

Other relevant toxicity information

The product has not been tested. The statement has been derived from the properties of the individual components. The product has been assessed on the basis of the components' available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
Acutely toxic for aquatic organisms. Toxic to aquatic organisms based on long-term (chronic) toxicity study data.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Toxicity to fish:
LC50 (96 h) 4 mg/l, Oncorhynchus mykiss (OECD Guideline 203, semistatic)
The details of the toxic effect relate to the nominal concentration.

LC50 (96 h) 4.04 mg/l, Fish (calculated)

LC50 (96 h) 3.909 mg/l, Fish (calculated)

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Toxicity to fish:
LC50 (96 h) 0.87 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 92/69/EEC, C.1, semistatic)

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Toxicity to fish:
LC50 (48 h) 6.53 mg/l, Oryzias latipes (JIS K 0102-71, semistatic)
The details of the toxic effect relate to the nominal concentration.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Aquatic invertebrates:
EC50 (48 h) 20 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
The details of the toxic effect relate to the nominal concentration.

EC50 (48 h) 7.07 mg/l, daphnia (calculated)

EC50 (48 h) 11.6 mg/l, daphnia (calculated)

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Aquatic invertebrates:
EC50 (48 h) 19.9 mg/l, Daphnia magna (Directive 79/831/EEC, static)
The details of the toxic effect relate to the nominal concentration.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Aquatic invertebrates:
EC50 (48 h) 3.53 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
The statement of the toxic effect relates to the analytically determined concentration.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Aquatic plants:
EC50 (72 h) 34 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
The details of the toxic effect relate to the nominal concentration.

No observed effect concentration (72 h) 9 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
The details of the toxic effect relate to the nominal concentration.

EC50 (96 h) 2.028 mg/l, algae (calculated)

EC50 (96 h) 14 mg/l, algae (calculated)

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Aquatic plants:
EC10 (72 h) 1.9 mg/l (growth rate), Desmodesmus subspicatus (Guideline 92/69/EEC, C.3, static)

EC50 (72 h) 18.8 mg/l (growth rate), Desmodesmus subspicatus (Guideline 92/69/EEC, C.3, static)

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Aquatic plants:
EC50 (72 h) > 2.01 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)
The statement of the toxic effect relates to the analytically determined concentration.

EC10 (72 h) 1.56 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)
The statement of the toxic effect relates to the analytically determined concentration.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Microorganisms/Effect on activated sludge:
EC50 > 1,000 mg/l, (OECD Guideline 209, aerobic)

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Microorganisms/Effect on activated sludge:
EC20 (30 min) 625 mg/l, activated sludge, domestic (DIN EN ISO 8192, aquatic)
Nominal concentration.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Microorganisms/Effect on activated sludge:
EC20 (3 h) > 1,000 mg/l, activated sludge, domestic (OECD Guideline 209, aerobic)
Limit concentration test only (LIMIT test). The details of the toxic effect relate to the nominal concentration.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Chronic toxicity to fish:
Study not necessary due to exposure considerations.

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Chronic toxicity to fish:
No data available.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Chronic toxicity to fish:
No data available regarding toxicity to fish.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Chronic toxicity to aquatic invertebrates:
Study not necessary due to exposure considerations.

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Chronic toxicity to aquatic invertebrates:
No data available.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Chronic toxicity to aquatic invertebrates:
No data available regarding toxicity to daphnids.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Product is not expected to be readily biodegradable.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria).

Information on: 2-Propen-1-one, 1-(4-morpholinyl)-
Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria).

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

Information on: 2,2'-Ethylenedioxydiethyl dimethacrylate
Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Assessment biodegradation and elimination (H2O):
Poorly biodegradable. Not readily biodegradable (by OECD criteria).

Information on: 5-Ethyl-1,3-dioxane-5-methanol
Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria). Easily eliminated from water.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Elimination information:
28 % DOC reduction (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic, non-adapted)

(calculated) Not readily biodegradable (by OECD criteria).

Information on: 2-Propen-1-one, 1-(4-morpholinyl)-
Elimination information:
35 % BOD of the ThOD (28 d) (OECD 301D; EEC 92/69, C.4-E) (other)

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Elimination information:
82 - 90 % CO2 formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic, non-adapted)

Information on: 2,2'-Ethylenedioxydiethyl dimethacrylate
Elimination information:
84.9 % CO2 formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic, non-adapted)

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Elimination information:
90 - 100 % DOC reduction (28 d) (OECD 301 A (new version)) (aerobic, activated sludge, domestic)

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Elimination information:
0 - 10 % BOD of the ThOD (28 d) (OECD Guideline 301 F) (aerobic, activated sludge, domestic)

Information on: 5-Ethyl-1,3-dioxane-5-methanol
Elimination information:
90 - 100 % (Directive 88/302/EEC, part C, p. 99)

12.3. Bioaccumulative potential

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Assessment bioaccumulation potential:
Significant accumulation in organisms is not to be expected.

Information on: 2,2'-Ethylenedioxydiethyl dimethacrylate
Assessment bioaccumulation potential:
No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Assessment bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Assessment bioaccumulation potential:
Does not significantly accumulate in organisms.

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate

Bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Bioaccumulation potential:

Bioconcentration factor (BCF): 21, Fish (calculated)
No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Bioaccumulation potential:

Bioconcentration factor (BCF): 23 - 55 (56 d), Cyprinus carpio (measured)

12.4. Mobility in soil

Information on: (5-Ethyl-1,3-dioxan-5-yl)methyl acrylate
Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

Information on: 2,2-bis(acryloyloxymethyl)butyl acrylate
Assessment transport between environmental compartments:
Volatility: The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

Information on: 2,2'-Ethylenedioxydiethyl dimethacrylate
Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

Information on: Oxybis(methyl-2,1-ethanediyl) diacrylate
Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

Information on: diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Add. remarks environm. fate & pathway:
Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

Other ecotoxicological advice:
The product has not been tested. The statement has been derived from the properties of the individual components. The product has been assessed on the basis of the components' available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:
Uncontaminated packaging can be re-used.
Packs that cannot be cleaned should be disposed of in the same manner as the contents.

SECTION 14: Transport Information

Land transport

ADR

UN number	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TRIMETHYLOLPROPANE TRIACRYLATE, (5-ETHYL-1,3-DIOXAN-5-YL)METHYL ACRYLATE) STABILIZED
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

RID

UN number	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TRIMETHYLOLPROPANE TRIACRYLATE, (5-ETHYL-1,3-DIOXAN-5-YL)METHYL ACRYLATE) STABILIZED
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

Inland waterway transport

ADN

UN number	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TRIMETHYLOLPROPANE TRIACRYLATE, (5-ETHYL-1,3-DIOXAN-5-YL)METHYL ACRYLATE) STABILIZED
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

Transport in inland waterway vessel

Not evaluated

Sea transport

IMDG

UN number:	UN 3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TRIMETHYLOLPROPANE TRIACRYLATE, (5-ETHYL-1,3-DIOXAN-5-YL)METHYL ACRYLATE) STABILIZED
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes Marine pollutant: YES
Special precautions for user:	None known

Air transport

IATA/ICAO

UN number:	UN 3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TRIMETHYLOLPROPANE TRIACRYLATE, (5-ETHYL-1,3-DIOXAN-5-YL)METHYL ACRYLATE) STABILIZED
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

14.1. UN number
See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

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

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

SECTION 15: Regulatory Information

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

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 3

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2. Chemical Safety Assessment

Advice on product handling can be found in sections 7 and 8 of this safety data sheet.

SECTION 16: Other Information

Any other intended applications should be discussed with the manufacturer.

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
STOT RE	Specific target organ toxicity — repeated exposure
Skin Sens.	Skin sensitization
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Aquatic Acute	Hazardous to the aquatic environment - acute
Repr.	Reproductive toxicity
Acute Tox.	Acute toxicity
H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs through prolonged or repeated oral exposure.
H411	Toxic to aquatic life with long lasting effects.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H302	Harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.

Abbreviations
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational

Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.