SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Carsystem UV Clear

Version		Revision Date:	Date of last issue: 06.07.2023
2.1	DE / EN	16.10.2023	Date of first issue: 12.08.2022

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

1.1 Product identifier

Trade name : Carsystem UV Clear

Product code : 154.528

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

Use of the Substance/Mixture : Paints, Coatings

Recommended restrictions on use : Industrial use, professional use

1.3 Details of the supplier of the safety data sheet

Company : JASA AG
Müslistrasse 43
8957 Spreitenbach
Schweiz

info@jasa-ag.ch, www.jasa-ag.ch

Telephone : +41 (0)44 431 60 70
Telefax : +41 (0)44 432 63 17

Responsible Department : Productmanagement, Tel: +41 (0)44 431 60 70, sds@jasa-ag.ch

1.4 Emergency telephone

Telephone : Tox Info Suisse (STIZ), Tel: 145

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Acute toxicity, Category 4	H312: Harmful in contact with skin.
Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

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

Hazardous ingredients which must be listed on the label:

Urethane Methacrylate
2,2-bis(acryloyloxymethyl)butyl acrylate
Methacrylic acid, monoester with propane-1,2-diol
pentaerythritol tetrakis(3-mercaptopropionate)
2-propenoic acid, reaction products with pentaerytrhitol
ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Mixture

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Urethane Methacrylate	Not Assigned	Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 --- Acute toxicity estimate Acute oral toxicity: 500 mg/kg Acute inhalation toxicity (vapor): 11 mg/l Acute dermal toxicity: 1.100 mg/kg	>= 30 - < 55
2,2-bis(acryloyloxymethyl)butyl	15625-89-5	Skin Irrit. 2; H315	>= 6 - < 11

acrylate	239-701-3 607-111-00-9 01-2119489896-11	Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	
tetrahydrofurfuryl methacrylate	2455-24-5 219-529-5	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system)	>= 6 - <= 10
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1 248-666-3 01-2119490226-37	Eye Irrit. 2; H319 Skin Sens. 1B; H317	>= 4 - < 7,5
2-hydroxy-2-methylpropiophenone	7473-98-5 231-272-0 01-2119472306-39	Acute Tox. 4; H302 Aquatic Chronic 3; H412 Acute toxicity estimate Acute oral toxicity: 1.694 mg/kg	>= 2 - <= 4
pentaerythritol tetrakis(3-mercaptopropionate)	7575-23-7 231-472-8 01-2119486981-23	Acute Tox. 4; H302 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1 Acute toxicity estimate Acute oral toxicity: 1.001 mg/kg	>= 2 - <= 5
2-propenoic acid, reaction products with pentaerytrhitol	1245638-61-2 01-2119490003-49	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1B; H317 Aquatic Chronic 2; H411	>= 2 - < 5

		Acute toxicity estimate Acute oral toxicity: 620 mg/kg	
ethanol	64-17-5 200-578-6 603-002-00-5 01-2119457610-43	Flam. Liq. 2; H225 Eye Irrit. 2; H319	>= 1 - < 2
ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	84434-11-7 282-810-6 01-2119987994-10	Skin Sens. 1B; H317 Aquatic Chronic 2; H411 ——————— Acute toxicity estimate Acute inhalation toxicity (vapor): > 20 mg/l	>= 0,1 - <= 1,3
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7 423-340-5 015-189-00-5 01-2119489401-38	Skin Sens. 1A; H317 Aquatic Chronic 4; H413	>= 0,01 - <= 0,1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
Move out of dangerous area.
Do not leave the victim unattended.
Take off contaminated clothing and shoes immediately.
Wash contaminated clothing before re-use.
Show this material safety data sheet to the doctor in attendance.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing

If inhaled : Move to fresh air.
Keep patient warm and at rest.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician immediately.

In case of skin contact : Wash off immediately with soap and plenty of water.
Call a physician if irritation develops or persists.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Keep eye wide open while rinsing.
If easy to do, remove contact lens, if worn.
Consult a physician.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed, in contact with skin or if inhaled.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO2)
Dry powder
Water spray jet
Alcohol-resistant foam

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting : Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.

Hazardous combustion products : Hazardous decomposition products due to incomplete combustion
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

5.3 Advice for firefighters

Special protective equipment for fire-fighters : In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Use water spray to cool unopened containers.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

In the event of fire and/or explosion do not breathe fumes. The product itself does not burn.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear personal protective equipment.
Evacuate personnel to safe areas.
Ensure adequate ventilation, especially in confined areas.
Avoid contact with skin, eyes and clothing.

6.2 Environmental precautions

Environmental precautions : Prevent spreading over a wide area (e.g., by containment or oil barriers).
Do not flush into surface water or sanitary sewer system.
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.
Do not flush with water.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Keep container closed when not in use.
Provide sufficient air exchange and/or exhaust in work rooms.
Wear personal protective equipment.

Advice on protection against fire and explosion : No special protective measures against fire required. Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

Further information on storage conditions : Storage must be in accordance with the BetrSichV (Germany).

Advice on common storage : Keep away from food and drink.

Storage class (TRGS 510) : 12

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
ethanol	64-17-5	AGW	200 ppm 380 mg/m3	DE TRGS 900
	Peak-limit category: 4;(II)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Routes of exposure	Potential health effects	Value
2,2-bis(acryloyloxymethyl) butyl acrylate	Consumers	Oral	Long-term systemic effects	0,5 mg/kg bw/day
	Consumers	Skin contact	Long-term systemic effects	42 mg/kg bw/day
	Workers	Skin contact	Long-term systemic effects	83 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	4,9 mg/m3
	Workers	Inhalation	Long-term systemic effects	0,87 mg/m3
Methacrylic acid, monoester with propane-1,2-diol	Workers	Inhalation	Long-term systemic effects	14,7 mg/m3
	Workers	Skin contact	Long-term systemic effects	4,2 mg/kg
	Consumers	Inhalation	Long-term systemic effects	8,8 mg/m3
	Consumers	Skin contact, Oral	Long-term systemic effects	2,5 mg/kg
ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	Workers	Inhalation	Long-term systemic effects	5,88 mg/m3
	Workers	Skin contact	Long-term systemic effects	1,7 mg/kg
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	Workers	Inhalation	Long-term systemic effects	21 mg/m3

	Workers	Skin contact	Long-term systemic effects	3 mg/kg
	Consumers	Inhalation	Long-term systemic effects	5,2 mg/m3
	Consumers	Skin contact, Oral	Long-term systemic effects	1,5 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
2,2-bis(acryloyloxymethyl)butyl acrylate	Fresh water	0,00087 mg/l
	Sea water	0,000087 mg/l
	Fresh water sediment	0,017 mg/kg
	Sea sediment	0,002 mg/kg
	Sewage treatment plant (STP)	6,25 mg/l
	Soil	0,003 mg/kg
	Oral (Secondary Poisoning)	10 mg/kg
Methacrylic acid, monoester with propane-1,2-diol	Fresh water	0,904 mg/l
	Sea water	0,904 mg/l
	Sewage treatment plant (STP)	10 mg/l
	Fresh water sediment	6,28 mg/kg
	Sea sediment	6,28 mg/kg
	Soil	0,727 mg/kg
2-hydroxy-2-methylpropiophenone	Fresh water	0,002 mg/l
	Sea water	0,0002 mg/l
	Sewage treatment plant (STP)	45 mg/l
	Fresh water sediment	0,009 mg/kg
	Sea sediment	0,001 mg/kg
	Soil	0,001 mg/kg
2-propenoic acid, reaction products with pentaerytrhitol	Fresh water	0,003 mg/l
	Sea water	0,0003 mg/l
	Sewage treatment plant (STP)	10 mg/l
	Fresh water sediment	1,73 mg/kg
	Sea sediment	0,173 mg/kg
	Soil	0,34 mg/kg
ethanol	Fresh water	0,96 mg/l
	Sea water	0,79 mg/l
	Sewage treatment plant (STP)	580 mg/l
	Fresh water sediment	3,6 mg/kg dry weight (d.w.)
	Sea sediment	2,9 mg/kg dry weight (d.w.)
	Soil	0,63 mg/kg dry weight (d.w.)
	Oral (Secondary Poisoning)	0,38 mg/kg food
ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	Fresh water	0,001 mg/l
	Sea water	0,0001 mg/l
	Fresh water	0,24 mg/kg

	Sea sediment	0,024 mg/kg
	Soil	0,047 mg/kg
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	Fresh water	0,001 mg/l
	Sea water	0,001 mg/l
	Sewage treatment plant (STP)	1 mg/l
	Fresh water sediment	0,712 mg/kg
	Sea sediment	0,712 mg/kg
	Soil	20 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Safety glasses with side-shields conforming to EN166

Hand protection
- Material : butyl-rubber
- Break through time : > 480 min
- Glove thickness : >= 0,4 mm
- Directive : DIN EN 374
- Protective index : Class 6

Remarks : Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Preventive skin protection

Skin and body protection : Please wear suitable protective clothing, e.g. made of cotton or heat-resistant synthetic fibres.
Long sleeved clothing

Respiratory protection : Apply technical measures to comply with the occupational exposure limits.
Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).

Filter type : Combined particulates and organic vapor type (A-P)

Protective measures : Ensure that eye flushing systems and safety showers are located close to the working place.
Avoid contact with the skin and the eyes.
Use only with adequate ventilation.

Environmental exposure controls

Soil : Avoid subsoil penetration.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Color	:	translucent
Odor	:	characteristic
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	Not applicable
Autoignition temperature	:	No data available
pH	:	Not applicable substance/mixture is non-soluble (in water)
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	Not applicable
Partition coefficient: n-octanol/water	:	No data available
Vapor pressure	:	No data available
Density	:	ca. 1,1 g/cm3 (20 °C)

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if used as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

SECTION 11: Toxicological information

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

Acute toxicity

Harmful if swallowed, in contact with skin or if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: 886,22 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: < 20 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: < 2.000 mg/kg
Method: Calculation method

Components:

Urethane Methacrylate:

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg
Method: Expert judgment

Acute inhalation toxicity : Acute toxicity estimate: 11 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Expert judgment

Acute dermal toxicity : Acute toxicity estimate: 1.100 mg/kg
Method: Expert judgment

2,2-bis(acryloyloxymethyl)butyl acrylate:

Acute oral toxicity : LD50 Oral (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0,55 mg/l
Exposure time: 6 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 Dermal (Rabbit): 5.170 mg/kg

tetrahydrofurfuryl methacrylate:

Acute oral toxicity : LD50 Oral (Rat): 3.945 mg/kg
Method: OECD Test Guideline 401

Methacrylic acid, monoester with propane-1,2-diol:

Acute oral toxicity : LD50 Oral (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 Dermal (Rabbit): > 5.000 mg/kg

2-hydroxy-2-methylpropiophenone:

Acute oral toxicity : LD50 Oral (Rat): 1.694 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 Dermal (Rat): 6.929 mg/kg
Method: OECD Test Guideline 402

pentaerythritol tetrakis(3-mercaptopropionate):

Acute oral toxicity : LD50 (Rat): > 1.000 - < 2.000 mg/kg
Method: OECD Test Guideline 423

Acute inhalation toxicity : LC50 (Rat): 3.363 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

2-propenoic acid, reaction products with pentaerytrhitol:

Acute oral toxicity : LD50 Oral (Rat): 620 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402

ethanol:

Acute oral toxicity : LD50 Oral (Rat): 10.470 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 117 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

Acute oral toxicity : LD50 Oral (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 Dermal (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:

Acute oral toxicity : LD50 Oral (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 Dermal (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Causes skin irritation.

Components:

Urethane Methacrylate:

Result : Skin irritation

2,2-bis(acryloyloxymethyl)butyl acrylate:

Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : Mild skin irritation

tetrahydrofurfuryl methacrylate:

Result : Skin irritation

2-propenoic acid, reaction products with pentaerytrhitol:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

Urethane Methacrylate:

Result : Moderate eye irritation

2,2-bis(acryloyloxymethyl)butyl acrylate:

Species : Rabbit
Result : Moderate eye irritation

tetrahydrofurfuryl methacrylate:

Result : Moderate eye irritation

Methacrylic acid, monoester with propane-1,2-diol:

Result : Moderate eye irritation

2-propenoic acid, reaction products with pentaerytrhitol:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Irreversible effects on the eye

ethanol:

Result : Mild eye irritation

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Components:

2,2-bis(acryloyloxymethyl)butyl acrylate:

Routes of exposure : Skin contact
Species : Humans
Result : positive

Methacrylic acid, monoester with propane-1,2-diol:

Assessment : The product is a skin sensitizer, sub-category 1B.

pentaerythritol tetrakis(3-mercaptopropionate):

Routes of exposure : Dermal
Species : Guinea pig
Assessment : The product is a skin sensitizer, sub-category 1A.
Method : OECD Test Guideline 406
Result : positive

2-propenoic acid, reaction products with pentaerytrhitol:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	The product is a skin sensitizer, sub-category 1B.

ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	The product is a skin sensitizer, sub-category 1B.

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	May cause sensitization by skin contact.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

Components:

tetrahydrofurfuryl methacrylate:

Assessment	:	May cause respiratory irritation.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

2,2-bis(acryloyloxymethyl)butyl acrylate:

Species	:	Mouse
NOAEL	:	> 200 mg/kg
Application Route	:	Dermal
Exposure time	:	16
Species	:	Rat
NOAEL	:	> 200 mg/kg
Application Route	:	Dermal
Exposure time	:	16
Species	:	Rat
NOAEL	:	300 mg/kg

Application Route : Oral
Exposure time : 28

Aspiration toxicity

Not classified based on available information.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Urethane Methacrylate:

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

2,2-bis(acryloyloxymethyl)butyl acrylate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 0,87 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 19,9 mg/l
Exposure time: 48 h
Method: Regulation (EC) No. 440/2008, Annex, C.2

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 4,86 mg/l
End point: Growth rate
Exposure time: 96 h

NOEC (Desmodesmus subspicatus (green algae)): 0,6 mg/l

M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Methacrylic acid, monoester with propane-1,2-diol:

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): 493 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 143 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 97,2 mg/l End point: Growth rate Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 45,2 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

2-hydroxy-2-methylpropiophenone:

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): 160 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 119 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): 1,95 mg/l End point: Growth rate Exposure time: 72 h Method: OECD Test Guideline 201

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

pentaerythritol tetrakis(3-mercaptopropionate):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,42 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,35 mg/l Exposure time: 48 h Method: OECD Test Guideline 202

M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

2-propenoic acid, reaction products with pentaerytrhitol:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 3,2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 13 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (algae)): 33 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

ethanol:

Toxicity to fish : LC50 (Fish): 11.200 mg/l
Exposure time: 96 h
Remarks: This product has no known ecotoxicological effects.

Toxicity to fish (Chronic toxicity) : NOEC: 250 mg/l
Species: Fish

ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1,89 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,26 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 1,01 mg/l
End point: Growth rate
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): > 1.000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:

Ecotoxicology Assessment

Chronic aquatic toxicity : May cause long lasting harmful effects to aquatic life.

12.2 Persistence and degradability

Components:

2,2-bis(acryloyloxymethyl)butyl acrylate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 82 %
Exposure time: 28 d

Methacrylic acid, monoester with propane-1,2-diol:

Biodegradability : Biodegradation: 81 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

pentaerythritol tetrakis(3-mercaptopropionate):

Biodegradability : Result: Not rapidly biodegradable
Biodegradation: 26 %
Exposure time: 28 d

2-propenoic acid, reaction products with pentaerytrhitol:

Biodegradability : Biodegradation: 14 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

ethanol:

Biodegradability : Result: Readily biodegradable.

ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

Biodegradability : Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

12.3 Bioaccumulative potential

Components:

2,2-bis(acryloyloxymethyl)butyl acrylate:

Bioaccumulation : Bioconcentration factor (BCF): 300

Partition coefficient: n-octanol/water : log Pow: 4,35 (23 °C)
Method: OECD Test Guideline 107

tetrahydrofurfuryl methacrylate:

Partition coefficient: n-octanol/water : log Pow: 1,76 (22,6 °C)

Methacrylic acid, monoester with propane-1,2-diol:

Partition coefficient: n- : log Pow: 0,97 (20 °C)

octanol/water

2-hydroxy-2-methylpropiophenone:

Partition coefficient: n-octanol/water	:	Pow: 41,5 (25 °C) log Pow: 1,62 (25 °C) pH: 5,75

pentaerythritol tetrakis(3-mercaptopropionate):

Bioaccumulation	:	Bioconcentration factor (BCF): 23,7
Partition coefficient: n-octanol/water	:	log Pow: 2,8 (30 °C)

2-propenoic acid, reaction products with pentaerytrhitol:

Partition coefficient: n-octanol/water	:	log Pow: 3,11

ethanol:

Partition coefficient: n-octanol/water	:	log Pow: -0,35 (20 °C)

ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate:

Partition coefficient: n-octanol/water	:	log Pow: 2,91 (25 °C) pH: 4,4

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide:

Partition coefficient: n-octanol/water	:	log Pow: 5,8 (22 °C)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not dispose of with domestic refuse.
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
Dispose of in accordance with local regulations.
Send to a licensed waste management company.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Packaging that is not properly emptied must be disposed of as the unused product.
Dispose of in accordance with local regulations.

Waste Code : The following Waste Codes are only suggestions:
08 01 11, waste paint and varnish containing organic solvents or other hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3082

ADR : UN 3082

RID : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(2,2-bis(acryloyloxymethyl)butyl acrylate, 2-propenoic acid, reaction products with pentaerytrhitol)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(2,2-bis(acryloyloxymethyl)butyl acrylate, 2-propenoic acid,

reaction products with pentaerytrhitol)

IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,2-bis(acryloyloxymethyl)butyl acrylate, 2-propenoic acid, reaction products with pentaerytrhitol)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (2,2-bis(acryloyloxymethyl)butyl acrylate, 2-propenoic acid, reaction products with pentaerytrhitol)

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADN	:	9	
ADR	:	9	
RID	:	9	
IMDG	:	9	
IATA	:	9	

14.4 Packing group

ADN

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)

RID

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

IATA (Passenger)

Packing instruction (passen-	:	964

ger aircraft)
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

14.5 Environmental hazards

ADN
Environmentally hazardous : yes

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : no

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 75, 3 If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorization (Article 59).	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable

REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E2	ENVIRONMENTAL HAZARDS
Water hazard class (Germany)	:	WGK 2 obviously hazardous to water Classification according to AwSV, Annex 1 (5.2)
Volatile organic compounds	:	Directive 2004/42/EC Volatile organic compounds (VOC) content: < 350 g/l VOC content for the product in a ready to use condition.

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical Safety Assessment

A chemical safety assessment according to (EC) regulation 1907/2006 (REACH) has not been carried out for this product.

SECTION 16: Other information

Full text of H-Statements

H225	:	Highly flammable liquid and vapor.
H302	:	Harmful if swallowed.
H312	:	Harmful 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.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.
H413	:	May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids

Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitization
STOT SE	:	Specific target organ toxicity - single exposure
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Acute Tox. 4	H302	Calculation method
Acute Tox. 4	H332	Expert judgment and weight of evidence determination.
Acute Tox. 4	H312	Expert judgment and weight of evidence determination.
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method
Aquatic Chronic 2	H411	Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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