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Tel.: +49 (0)800 4372522

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 17.11.2022 Version number 5 (replaces version 4) Revision: 17.11.2022

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

- · 1.1 Product identifier
 - · Trade name: Signum ceramic bond II
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.
 - · Application of the substance / the mixture Auxiliary for manufacture of dental prothesis
- · 1.3 Details of the supplier of the safety data sheet
 - Manufacturer/Supplier:

Kulzer GmbH

Leipziger Straße 2, 63450 Hanau (Germany)

Informing department: E-Mail: msds@kulzer-dental.com

· 1.4 Emergency telephone number: Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
 - · Classification according to Regulation (EC) No 1272/2008

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- · 2.2 Label elements
 - · Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

· Hazard pictograms



GHS07

- · Signal word Warning
- · Hazard-determining components of labelling:

propylidynetrimethanol, ethoxylated, esters with acrylic acid

1,4-butandioldimethacrylate

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate

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

2-propenoic acid, 1,1'-[(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)]]ester, reaction products with diethylamine

· Hazard statements

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection.

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

Additional information:

15 % of the mixture consists of component(s) of unknown toxicity.

Contains 15 % of components with unknown hazards to the aquatic environment.

· 2.3 Other hazards -

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- · Results of PBT and vPvB assessment
 - · **PBT:** Not applicable. · **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· Description: Product based on methacrylates

· Dangerous components:		
	propylidynetrimethanol, ethoxylated, esters with acrylic acid	≥10-≤50%
	Eye Irrit. 2, H319; Skin Sens. 1, H317 Aquatic Chronic 3, H412	
	1,4-butandioldimethacrylate	<i>≥</i> 10- <i>≤</i> 25%
	Skin Sens. 1B, H317	
EINECS: 276-957-5	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	≥10-<25%
	Aquatic Chronic 2, H411 Skin Sens. 1B, H317 EUH204	
EINECS: 278-355-8 Reg.nr.: 01-2119972295-29-xxxx	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide Repr. 2, H361f Aquatic Chronic 2, H411 Skin Sens. 1B, H317	≥1-<2.5%
EC number: 601-101-8 Reg.nr.: 01-2119961351-42- XXXX	2-propenoic acid, 1,1'-[(1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)]]ester, reaction products with diethylamine Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1B, H317 EUH208	≥1-≤5%

[·] Additional information For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- · 4.1 Description of first aid measures
 - · After inhalation Supply fresh air; consult doctor in case of symptoms.
 - · After skin contact

Instantly wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· After eye contact

Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

· After swallowing

Rinse out mouth and then drink plenty of water.

In case of persistent symptoms consult doctor.

Seek immediate medical advice.

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

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed No further relevant information available.

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SECTION 5: Firefighting measures

- 5.1 Extinguishing media
 - Suitable extinguishing agents

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam. Use fire fighting measures that suit the environment.

· 5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

- 5.3 Advice for firefighters
 - **Protective equipment:** No special measures required.
 - Additional information -

SECTION 6: Accidental release measures

- · 6.1 Personal precautions, protective equipment and emergency procedures Avoid contact with eyes and skin.
- 6.2 Environmental precautions: Prevent material from reaching sewage system, holes and cellars.
- 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).

6.4 Reference to other sections

No dangerous materials are released.

See Section 8 for information on personal protection equipment.

SECTION 7: Handling and storage

- · 7.1 Precautions for safe handling Keep containers tightly sealed.
 - Information about protection against explosions and fires: No special measures required.
- · 7.2 Conditions for safe storage, including any incompatibilities
 - Storage
 - · Requirements to be met by storerooms and containers: No special requirements.
 - Information about storage in one common storage facility: Not required.
 - · Further information about storage conditions: Store cool (not above 25 °C).
- · 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

Components with critical values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Not required.

DAU			
· DNI	ELS		
2082-81-7	1,4-butandioldimethacrylate		
Oral	general population, long term, systemic	2.5 mg/Kg (not defined)	
Dermal	worker industrial, long term, systemic	4.2 mg/Kg/d (not defined)	
	general population, long term, systemic	2.5 mg/Kg/d (not defined)	
Inhalative	worker professional, long term, systemic	14.5 mg/m3 (not defined)	
	general population, long term, systemic	4.3 mg/m3 (not defined)	
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72869-86-	4 7,7,9(or 7,9,9)-trimet	hyl-4,13-dioxo	(Contd. of page -3,14-dioxa-5,12-diazahexadecane-1,16-diy	
	bismethacrylate			
Oral	general population, long		0.3 mg/Kg (not defined)	
Dermal	worker industrial, long te	•	1.3 mg/Kg/d (not defined)	
	general population, long		0.7 mg/Kg/d (not defined)	
Inhalative	worker industrial, long te	•	3.3 mg/m3 (not defined)	
	general population, long		0.6 mg/m3 (not defined)	
	8 diphenyl(2,4,6-trimeth	•	•	
Oral	general population, long	•	0.0833 mg/Kg (not defined)	
Dermal	worker industrial, long te	rm, systemic	0.233 mg/Kg/d (not defined)	
	general population, long	term, systemic	0.0833 mg/Kg/d (not defined)	
Inhalative	worker industrial, long te	rm, systemic	0.822 mg/m3 (not defined)	
	general population, long	term, systemic	0.145 mg/m3 (not defined)	
· PNI	-Cs			
2082-81-7	1,4-butandioldimethacı	rylate		
freshwater		0.043 mg/l (not defined)		
marine wa	ter	0.004 mg/l (not defined)		
sewage tre	eatment plant	2 mg/l (not defined)		
-	dry weight, freshwater	3.12 mg/Kg (no	ot defined)	
	dry weight, marine water	~ ~ ,	,	
soil, dry w		0.573 mg/Kg (not defined)		
			-3,14-dioxa-5,12-diazahexadecane-1,16-diy	
freshwater	•	0.01 mg/l (not d	defined)	
marine water		0.001 mg/l (not defined)		
sewage tre	sewage treatment plant		3.61 mg/l (not defined)	
sediment,	dry weight, freshwater	4.56 mg/Kg (not defined)		
sediment,	dry weight, marine water	,		
soil, dry weight		0.91 mg/Kg (not defined)		
75980-60-8 diphenyl(2,4,6-trimeth		ylbenzoyl)phos	sphine oxide	
freshwater		0.0014 mg/l (no	ot defined)	
marine wa	ter	0.00014 mg/l (not defined)		
sediment, dry weight, freshwater		0.115 mg/Kg (n	not defined)	
	dry weight, marine water	0.0115 mg/Kg ((not defined)	
soil, dry w	eight	0.0222 mg/Kg ((not defined)	

Additional information: The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

- Appropriate engineering controls No further data; see item 7.
 Individual protection measures, such as personal protective equipment

 General protective and hygienic measures
 Avoid contact with the eyes.
 Keep away from foodstuffs, beverages and food.
 Instantly remove any soiled and impregnated garments.
 Wash hands during breaks and at the end of the work.
 Avoid contact with the eyes and skin.

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· Breathing equipment:

Not neccessary with efficient local exhaust. If exposition to vapours is possible, use breathing protective mask (filter A).

Hand protection

Check protective gloves prior to each use for their proper condition. recommended

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Butyl rubber, BR Nitrile rubber, NBR

Eye/face protection Tightly sealed safety glasses.

· Body protection: Light weight protective clothing

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

General Information

Physical state · Colour: Colourless · Smell: Ester-like

· Melting point/freezing point:

· Boiling point or initial boiling point and boiling range

· Flammability

Odour threshold:

Lower and upper explosion limit Lower: Upper:

Flash point:

· Ignition temperature: · Decomposition temperature:

SADT pН

Viscosity:

Kinematic viscosity

dynamic: Solubility Water:

· Partition coefficient n-octanol/water (log

Steam pressure at 20 °C: · Density and/or relative density

Density at 20 °C

Not determined.

Not determined

100 °C Not applicable.

> Not determined. Not determined.

>100 °C (72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahéxadecane-1.16-diyl bismethacrylate)

265.0 °C Not determined.

Not determined.

Not determined. Not determined.

Not miscible or difficult to mix

Not determined.

40 hPa

0.850 g/cm3

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· Relative density	Not determined.
· Vapour density	Not determined.

• 9.2 Other information No further relevant information available.

Appearance:

Form: Fluid

Important information on protection of health and environment, and on safety.

• Self-inflammability: Product is not selfigniting. • Explosive properties: Product is not explosive.

· Solvent content:

· VOC EU g/l
· Change in condition

Evaporation rate Not determined.

· Information with regard to physical hazard classes

· Explosives	Void
· Flammable gases	Void
Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
Flammable liquids	Void
Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
Substances and mixtures, which emit	
flammable gases in contact with water	Void
· Oxidising liquids	Void
Oxidising solids	Void
· Organic peroxides	Void
Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- · 10.1 Reactivity No further relevant information available.
- · 10.2 Chemical stability
 - · Conditions to be avoided: No decomposition if used and stored according to specifications.
- · 10.3 Possibility of hazardous reactions No dangerous reactions known
- · 10.4 Conditions to avoid No further relevant information available.
- · 10.5 Incompatible materials: No further relevant information available.
- · 10.6 Hazardous decomposition products: None
 - Additional information:

If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

SECTION 11: Toxicological information

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

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

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· L	D/LC5	0 values that are relevant for classification:
28961-	43-5 pr	opylidynetrimethanol, ethoxylated, esters with acrylic acid
Oral	LD50	>2,000 mg/kg (rat) (OECD 401)
Dermal	LD50	>13,200 mg/kg (rabbit)
2530-8	5-0 3-tı	imethoxysilylpropyl methacrylate
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
2082-8	1-7 1,4	butandioldimethacrylate
Oral	LD50	10,066 mg/kg (rat) (OECD 401)
72869-		7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl smethacrylate
Oral	LD50	>5,000 mg/kg (rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
68611-	44-9 Si	lane, dichlorodimethyl-, reaction products with silica
Oral	LD50	>5,000 mg/kg (rat)
75980-	60-8 di	phenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Oral	LD50	>5,000 mg/kg (rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
111497		-propenoic acid, 1,1'-[(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)]] ester, reaction products with diethylamine
Oral	LD50	>5,000 mg/kg (rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
Clein		pian/irritation Passad on available data, the elegation criteria are not mot

- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation

- Causes serious eye irritation.
 Respiratory or skin sensitisation
- May cause an allergic skin reaction.

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

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

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

 STOT-single exposure Based on available data, the classification criteria are not met.

- · STOT-repeated exposure Based on available data, the classification criteria are not met. Aspiration hazard Based on available data, the classification criteria are not met.
- 11.2 Information on other hazards
 - Endocrine disrupting properties

None of the ingredients is listed.

SECTIO	N 12: Ecological information	
· 12.1 Toxic	ity	
· Aquatio	toxicity:	
2530-85-0	3-trimethoxysilylpropyl methacrylate	
EC50/48h	>100 mg/l (daphnia) (EU C2.)	
LC50/96h	>100 mg/l (fish) (EU C.1)	
2082-81-7	1,4-butandioldimethacrylate	
EC50/21d	14.1 mg/L (daphnia) (OECD 211)	
	•	(Contd. on page



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EC50/48h	32.5 mg/l (fish)
	5.09 mg/l (daphnia) (OECD 211)
	9.79 mg/l (algae) (OECD 201)
	2.11 mg/l (algae) (OECD 201)
	25 mg/l (fish)
ErC10/72h	4.35 mg/L (algae) (OECD 201)
	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl pismethacrylate
EC50/48h	>1.2 mg/l (daphnia) (OECD 202)
LC50/96h	10.1 mg/l (fish) (OECD 203)
	>0.68 mg/l (algae) (OECD 201)
	0.21 mg/l (algae) (OECD 201)
	Silane, dichlorodimethyl-, reaction products with silica
LC50/96h	>10,000 mg/l (fish) (OECD 203)
	>10,000 mg/l (algae) (OECD 201)
EC50 / 24h	>10,000 mg/l (daphnia) (OECD 202)
	liphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
EC50/48h	10,100 mg/l (algae)
	3.53 mg/l (daphnia) (OECD 202)
LC50/96h	1.4 mg/l (fish) (OECD 203)
	>2.01 mg/l (algae) (OECD 201)
ErC10/72h	1.56 mg/L (algae) (OECD 201)
	ence and degradability
	trimethoxysilylpropyl methacrylate
	on 69 % /28d (not defined) (OECD 301F; ISO 9408/ EEC 92/69/V, C.4-D)
	4-butandioldimethacrylate
	on 84 % /28d (not defined) (OECD 310)
k	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl pismethacrylate
	on 22 % /28d (not defined) (OECD 301B; ISO/ 9439/ EEC 92/69/V, C.4-C)
	liphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Biodegradation	on 0-10 % /28d (not defined) (OECD 301F; ISO 9408/ EEC 92/69/V, C.4-D)
12.3 Bioaccu	umulative potential
75980-60-8 c	liphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Bloconcentra	tion factor (BCF) 47-55 (not defined)

- 12.4 Mobility in soil No further relevant information available. 12.5 Results of PBT and vPvB assessment
- PBT: Not applicable.

 vPvB: Not applicable.

 12.6 Endocrine disrupting properties

For information on endocrine disrupting properties see section 11.

12.7 Other adverse effects

- - Additional ecological information:
 - General notes:

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

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Danger to drinking water if even extremely small quantities leak into soil.

SECTION 13: Disposal considerations

- · 13.1 Waste treatment methods
 - Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

- Uncleaned packagings:
 - · Recommendation:

Disposal must be made according to official regulations.

Non contaminated packagings can be used for recycling.

SECTION 14: Transport information	on	
· 14.1 UN number or ID number · ADR, ADN, IMDG, IATA	Void	
· 14.2 UN proper shipping name · ADR · ADN, IMDG, IATA	Void Void	
· 14.3 Transport hazard class(es)		
· ADR, ADN, IMDG, IATA · Class	Void	
14.4 Packing group ADR, IMDG, IATA	Void	
14.5 Environmental hazards: Marine pollutant:	No	
· 14.6 Special precautions for user	Not applicable.	
· 14.7 Maritime transport in bulk according IMO instruments	g to Not applicable.	
· Transport/Additional information:	-	
UN "Model Regulation":	Void	

SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- No further relevant information available.
- · 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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· Relevant phrases

Causes skin irritation. H315

May cause an allergic skin reaction. H317

Causes serious eye irritation. H319

H361f Suspected of damaging fertility

Toxic to aquatic life with long lasting effects. H411

Harmful to aquatic life with long lasting effects. H412

EUH204 Contains isocyanates. May produce an allergic reaction.

EUH208 Contains . May produce an allergic reaction.

Abbreviations and acronyms:

SADT: Self Accelerating Decomposition Temperature

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOCV: Lenkungsabgabe auf flüchtigen organischen Verbindungen, Schweiz (Swiss Ordinance on volatile organic

compounds)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Irrit. 2: Serious eye damage/eye irritation – Cskin Sens. 1: Skin sensitisation – Category 1

Skin Sens. 1B: Skin sensitisation - Category 1B

Repr. 2: Reproductive toxicity – Category 2
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

* Data compared to the previous version altered.