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Tel.: +49 (0)800 4372522

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

Printing date 16.11.2022 Version number 5 (replaces version 4) Revision: 16.11.2022

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

- · 1.1 Product identifier
 - · Trade name: Signum opaque F
- · 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

H319 Causes serious eye irritation. Eye Irrit. 2

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

Aquatic Chronic 2 H411 Toxic 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 GHS09

- · Signal word Warning

Hazard-determining components of labelling: Bisphenol A Diglycidylether Diacrylate (BADGE-DA)

propylidynetrimethanol, ethoxylated, esters with acrylic acid

methacrylic acid, monoester with propane-1,2-diol

triethylen glycol dimethacrylate diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

Hazard statements

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

· Precautionary statements

P273 Avoid release to the environment.

P280 Wear protective gloves / eye protection.

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

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SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

Description: Product based on methacrylates

· Dangerous components:		
NLP: 500-130-2	Bisphenol A Diglycidylether Diacrylate (BADGE-DA) Aquatic Chronic 2, H411 Skin Sens. 1, H317	≥25-≤50%
	propylidynetrimethanol, ethoxylated, esters with acrylic acid Eye Irrit. 2, H319; Skin Sens. 1, H317 Aquatic Chronic 3, H412	≥10-≤25%
	methacrylic acid, monoester with propane-1,2-diol Eye Irrit. 2, H319; Skin Sens. 1, H317	≥1-≤5%
	triethylen glycol dimethacrylate Skin Sens. 1B, H317	≥1-≤5%
EINECS: 278-355-8 Reg.nr.: 01-2119972295-29-xxxx	Skin Sens. 1B, H317	≥0.25-<1%

[·] 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 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. Then consult doctor.

After swallowing

Rinse out mouth and then drink plenty of water.

In case of persistent symptoms consult doctor.

· 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.

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.

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- 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.

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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.

· DNI	· DNELs		
55818-57-	55818-57-0 Bisphenol A Diglycidylether Diacrylate (BADGE-DA)		
Dermal	worker industrial, long term, systemic	17.5 mg/Kg/d (not defined)	
Inhalative	worker industrial, long term, systemic	122.5 mg/m3 (not defined)	
27813-02-	1 methacrylic acid, monoester with pr	opane-1,2-diol	
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 industrial, long term, systemic	14.7 mg/m3 (not defined)	
	general population, long term, systemic	8.8 mg/m3 (not defined)	
109-16-0 1	riethylen glycol dimethacrylate		
Oral	general population, long term, systemic	8.33 mg/Kg (not defined)	
Dermal	worker industrial, long term, systemic	13.9 mg/Kg/d (not defined)	
	general population, long term, systemic	8.33 mg/Kg/d (not defined)	
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			105 (0) (15	(Contd. of pag
innaiative	worker industrial, long te		48.5 mg/m3 (not defined)	
general population, long term, systemic		9 ,		
	8 diphenyl(2,4,6-trimeth	• • • • • • • • • • • • • • • • • • • •	•	
Oral	general population, long	. •	, , , , , , , , , , , , , , , , , , ,	
Dermal	worker industrial, long te	•	0.233 mg/Kg/d (not defined)	
	general population, long	•	,	
Inhalative	worker industrial, long te	-	0.822 mg/m3 (not defined)	
	general population, long	term, systemic	0.145 mg/m3 (not defined)	
·PNE	ECs			
55818-57-	0 Bisphenol A Diglycidy	lether Diacryl	ate (BADGE-DA)	
freshwater	r	0.1 mg/l (not d	efined)	
marine wa	ter	0.01 mg/l (not	defined)	
intermedia	ite water release	1 mg/l (not def	lined)	
sewage tre	eatment plant	10 mg/l (not de	efined)	
sediment,	dry weight, freshwater	35.8 mg/Kg (n	ot defined)	
soil, dry w	eight	71 mg/Kg (not	defined)	
27813-02-	1 methacrylic acid, mor	oester with pr	opane-1,2-diol	
freshwater	r	0.904 mg/l (no	t defined)	
marine wa	ter	0.904 mg/l (no	t defined)	
sewage tre	eatment plant	10 mg/l (not de	•	
sediment,	dry weight, freshwater	6.28 mg/Kg (n	ot defined)	
sediment, dry weight, marine water		6.28 mg/Kg (not defined)		
soil, dry weight		0.727 mg/Kg (not defined)	
109-16-0 t	triethylen glycol dimetha	acrylate		
freshwater		0.016 mg/l (no		
marine wa	ter	0.002 mg/l (no	•	
-	eatment plant	1.7 mg/l (not d		
	dry weight, freshwater	0.185 mg/Kg (•	
sediment,	dry weight, marine water	0.018 mg/Kg (not defined)	
soil, dry w				
	8 diphenyl(2,4,6-trimeth		-	
freshwater		0.0014 mg/l (n		
marine wa		0.00014 mg/l (,	
sediment, dry weight, freshwater		0.115 mg/Kg (· · · · · · · · · · · · · · · · · · ·	
	dry weight, marine water			
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.
- Appropriate engineering controls No luttler 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.

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Avoid contact with the eyes and skin.

Breathing equipment:

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

Hand protection

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.

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

· Smell:

· Physical state Fluid Brown · Colour: Pink White

Colourless Ester-like

100 °C

Odour threshold:

Not determined. · Melting point/freezing point: Not determined Boiling point or initial boiling point and

boiling range

· Flammability Not applicable.

· Lower and upper explosion limit

Lower: Not determined. Upper: Not determined.

111 °C (27813-02-1 methacrylic acid, · Flash point: monoester with propane-1,2-diol)

· Decomposition temperature: Not determined.

SADT рΗ

Not determined. · Viscosity:

· Kinematic viscosity Not determined. Not determined. · dynamic:

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Solubility

Water:

Not miscible or difficult to mix

Partition coefficient n-octanol/water (log

value

Not determined.

· Steam pressure at 20 °C: 40 mbar

Density and/or relative density

• Density at 20 °C
• Relative density
• Vapour density

· 9.2 Other information

No further relevant information available.

· Appearance:

Form:

Pasty

Important information on protection of

health and environment, and on safety.

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

Not determined.

· Solvent content:

· VOC EU

g/l

Change in condition

Evaporation rate

Evaporation rate Not determined.

· Information with regard to physical hazard classes

 Explosives Void · Flammable gases Void · Aerosols Void Oxidising gases
Gases under pressure Void Void · Flammable liquids Void · Flammable solids Void · Self-reactive substances and mixtures Void · Pvrophoric 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

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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.

Acute tox	Acute toxicity based on available data, the classification chieffa are not met.		
· LD/LC	· LD/LC50 values that are relevant for classification:		
55818-57-0 E	55818-57-0 Bisphenol A Diglycidylether Diacrylate (BADGE-DA)		
Oral	LD0	>2,000 mg/kg (rat) (OECD 401)	
Dermal	LD0	>2,000 mg/kg (rat) (OECD 402)	
Sensitisation	sensitization	(human)	
		(mouse) (LLNA)	
28961-43-5 p	28961-43-5 propylidynetrimethanol, ethoxylated, esters with acrylic acid		
Oral	LD50	>2,000 mg/kg (rat) (OECD 401)	
Dermal	LD50	>13,200 mg/kg (rabbit)	
27813-02-1 n	27813-02-1 methacrylic acid, monoester with propane-1,2-diol		
Oral	LD50	>2,000 mg/kg (rat) (OECD 401)	
Dermal	LD50	>5,000 mg/kg (rabbit)	
109-16-0 trie	109-16-0 triethylen glycol dimethacrylate		
Oral	LD50	8,300 mg/kg (rat)	
Dermal	LD50	>2,000 mg/kg (mouse)	
75980-60-8 d	75980-60-8 diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide		
Oral	LD50	>5,000 mg/kg (rat) (OECD 401)	
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)	

- 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.

SECTION 12: Ecological information

· 12.1 Toxicity

Aquatic toxicity:

65997-17-3 Glaspulver

EC50/72h >1,000 mg/l (daphnia)

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LC50/96h	>1,000 mg/l (fish)
	>1,000 mg/l (algae)
NOEC / 72h	1,000 mg/l (algae)
	1,000 mg/l (daphnia)
	Bisphenol A Diglycidylether Diacrylate (BADGE-DA)
EC50/72h	>110 mg/l (algae) (OECD 201)
LC50/96h	>79 mg/l (fish) (OECD 203)
	nethacrylic acid, monoester with propane-1,2-diol
EC50/72h	>97.2 mg/l (algae)
EC50/48h	>143 mg/l (daphnia) (OECD 202)
NOEC / 21d	45.2 mg/l (daphnia) (OECD 211)
	>97.2 mg/l (algae) (OECD 201)
NOEC / 72h	>97.2 mg/l (algae) (OECD 201)
LC50/48h	483 mg/L (fish)
109-16-0 trie	thylen glycol dimethacrylate
EC50/21d	51.9 mg/L (daphnia) (OECD 211)
LC50/96h	16.4 mg/l (fish) (OECD 203)
NOEC / 21d	32 mg/l (daphnia) (OECD 211)
ErC50 / 72 h	>100 mg/l (algae) (OECD 201)
NOEC / 72h	18.6 mg/l (algae) (OECD 201)
EbC50 / 72h	72.8 mg/l (algae) (OECD 201)
	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)
ErC50 / 72 h	>2.01 mg/l (algae) (OECD 201)
ErC10/72h	1.56 mg/L (algae) (OECD 201)
12.2 Persiste	ence and degradability
27813-02-1 n	nethacrylic acid, monoester with propane-1,2-diol
Biodegradation	on 81 % /28d (not defined) (OECD 301C)
	thylen glycol dimethacrylate
	on 85 % /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)
	ımulative potential
	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.

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- · 12.7 Other adverse effects
 - · Additional ecological information:
 - · General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Do not allow product to reach ground water, water bodies or sewage system.

Danger to drinking water if even 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 informat	ion
· 14.1 UN number or ID number · ADR, IMDG, IATA	UN3082
· 14.2 UN proper shipping name · IMDG, IATA	ENVIRONMENTALLY HAZARDOU SUBSTANCE, LIQUID, N.O.S. (Bisphenol I Diglycidylether Diacrylate (BADGE-DA))
· 14.3 Transport hazard class(es)	
ADR	
· Class	9 (M6) Miscellaneous dangerous substance and articles.
· Label	9
· IMDG	
Class	 9 Miscellaneous dangerous substances ar articles.
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· Label	9
· IATA	
1 1 1 1 1 1 1 1 1 1	
· Class	 Miscellaneous dangerous substances an articles.
· Label	9
· 14.4 Packing group · ADR, IMDG, IATA	III
· 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR): · Special marking (IATA):	No Symbol (fish and tree) Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Miscellaneous dangerous substances an articles.
· Kemler Number: · EMS Number: · Stowage Category	90 F-A,S-F A
· 14.7 Maritime transport in bulk according IMO instruments	g to Not applicable.
· Transport/Additional information:	-
· ADR · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging 30 ml Maximum net quantity per outer packaging 1000 ml
· Transport category · Tunnel restriction code	3 (-)
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging 30 ml Maximum net quantity per outer packaging 1000 ml
· UN "Model Regulation":	Void

SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Directive 2012/18/EU
- irective 2012/18/EU
 Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t
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Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t 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.

Relevant phrases

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H361f Suspected of damaging fertility. H411 Toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.

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

EDSO: Letrial dose, 30 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1

Series 2: Beard with the specific Category 2

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.