



**Safety Data Sheet
according to WHS Regulations**

Printing date 01.02.2021

Version number 5


Revision: 01.02.2021

Hazardous according to criteria of Australian Safety and Compensation Council.

1 Identification

- **Product identifier**
 - **Trade name:** **Signum opaque F**
 - **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
- **Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
Kulzer Australia Pty Ltd
Unit 20, 53 Lorraine Street
Peakhurst, NSW 2210
Australia
Tel: +61 (0) 2 9153 0311
 - **Informing department:** see above
 - **Emergency telephone number:**
Poison Information Number: Australia 13 11 26 & New Zealand 0800 764 766

2 Hazard(s) Identification

- **Classification of the substance or mixture**
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
- **Label elements**
 - **GHS label elements**
The product is classified and labelled according to the Globally Harmonised System (GHS).
 - **Hazard pictograms**

GHS07
 - **Signal word** Warning
 - **Hazard-determining components of labelling:**
Bisphenol A Diglycidylether Diacrylate (BADGE-DA)
benzenamine, N,N,2,4,6-pentamethyl-
methacrylic acid, monoester with propane-1,2-diol
diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide
 - **Hazard statements**
Causes serious eye irritation.
May cause an allergic skin reaction.
 - **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
- **Other hazards -**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.

(Contd. on page 2)

AUS

**Safety Data Sheet
according to WHS Regulations**

Printing date 01.02.2021

Version number 5

Revision: 01.02.2021

Trade name: Signum opaque F· **vPvB:** Not applicable.

(Contd. of page 1)

3 Composition and Information on Ingredients· **Chemical characterisation: Mixtures**· **Description:** Product based on methacrylates· **Dangerous components:**

CAS: 28961-43-5	propylidynetrimethanol, ethoxylated, esters with acrylic acid Eye Irrit. 2A, H319	10-25%
CAS: 55818-57-0 EINECS: 225-144-3	Bisphenol A Diglycidylether Diacrylate (BADGE-DA) Skin Sens. 1, H317	10-25%
CAS: 109-16-0 EINECS: 203-652-6	triethylen glycol dimethacrylate	5-10%
CAS: 27813-02-1 EINECS: 248-666-3	methacrylic acid, monoester with propane-1,2-diol Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	5-10%
CAS: 10373-78-1 EINECS: 233-814-1	dl-bornane-2,3-dione Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0-5%
CAS: 75980-60-8 EINECS: 278-355-8	diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide Repr. 2, H361; Skin Sens. 1B, H317	< 1%

· **Additional information** For the wording of the listed hazard phrases refer to section 16.**4 First Aid Measures**· **Description of first aid measures**· **After skin contact** The product is not skin irritating.· **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.

· **Information for doctor**· **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire Fighting Measures· **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.

· **Special hazards arising from the substance or mixture**

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

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

AUS

(Contd. on page 3)



**Safety Data Sheet
according to WHS Regulations**

Printing date 01.02.2021

Version number 5

Revision: 01.02.2021

Trade name: Signum opaque F

(Contd. of page 2)

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Prevent material from reaching sewage system, holes and cellars.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
- **Reference to other sections**
No dangerous materials are released.
See Section 8 for information on personal protection equipment.
-

7 Handling and Storage

- **Handling**
 - **Precautions for safe handling** Keep containers tightly sealed.
 - **Information about protection against explosions and fires:** No special measures required.
- **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).
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.

· DNELs

4687-94-9 (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)]diacrylate

Dermal	worker industr., l.te., syst.	17.5 mg/Kg/d (nd)
Inhalative	worker industr., l.te., syst.	122.5 mg/m3 (nd)

55818-57-0 Bisphenol A Diglycidylether Diacrylate (BADGE-DA)

Dermal	worker industr., l.te., syst.	17.5 mg/Kg/d (nd)
Inhalative	worker industr., l.te., syst.	122.5 mg/m3 (nd)

109-16-0 triethylen glycol dimethacrylate

Dermal	worker industr., l.te., syst.	13.9 mg/Kg/d (nd)
Inhalative	worker industr., l.te., syst.	48.5 mg/m3 (nd)

13463-67-7 Titanium dioxide

Inhalative	worker industr., l.te., local	10 mg/m3 (human)
	worker profess., l.te., local	10 mg/m3 (human)

· PNECs

4687-94-9 (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)]diacrylate

freshwater	0.1 mg/l (nd)
marine water	0.01 mg/l (nd)
interm. wat. release	1.0 mg/l (nd)

(Contd. on page 4)



**Safety Data Sheet
according to WHS Regulations**

Printing date 01.02.2021

Version number 5

Revision: 01.02.2021

Trade name: Signum opaque F

(Contd. of page 3)

STP	10 mg/l (nd)
sedim., dw, fre.wat.	35.8 mg/Kg (nd)
soil,dw	71 mg/Kg (nd)
55818-57-0 Bisphenol A Diglycidylether Diacrylate (BADGE-DA)	
freshwater	0.1 mg/l (nd)
marine water	0.01 mg/l (nd)
interm. wat. release	1.0 mg/l (nd)
STP	10 mg/l (nd)
sedim., dw, fre.wat.	35.8 mg/Kg (nd)
soil,dw	71 mg/Kg (nd)
109-16-0 triethylen glycol dimethacrylate	
marine water	0.0164 mg/l (nd)
sedim., dw, fre.wat.	1.85 mg/Kg (nd)
sedim., dw, mar.wat.	0.185 mg/Kg (nd)
soil,dw	0.274 mg/Kg (nd)
13463-67-7 Titanium dioxide	
freshwater	0.127 mg/l (nd)
marine water	1 mg/l (nd)
sedim., dw, fre.wat.	1000 mg/Kg (nd)
sedim., dw, mar.wat.	100 mg/Kg (nd)
soil,dw	100 mg/Kg (nd)

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

· **Exposure controls**

· **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.

· **Breathing equipment:**

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

· **Protection of hands:**

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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 5)

AUS



**Safety Data Sheet
according to WHS Regulations**

Printing date 01.02.2021

Version number 5

Revision: 01.02.2021

Trade name: Signum opaque F

(Contd. of page 4)

- **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 protection:** Protective goggles are recommended.
- **Body protection:** Light weight protective clothing

9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

- **Form:** Pasty
- **Colour:** According to product specification

- **Smell:** Ester-like
- **Odour threshold:** Not determined.

- **pH-value:** Not determined.

· **Change in condition**

- **Melting point/freezing point:** Not determined
- **Initial boiling point and boiling range:** 100 °C

- **Flash point:** 101 °C

- **Inflammability (solid, gaseous)** Not applicable.

· **Ignition temperature:**

- **Decomposition temperature:** Not determined.

- **Self-inflammability:** Product is not selfigniting.

- **Explosive properties:** Product is not explosive.

· **Critical values for explosion:**

- **Lower:** Not determined.
- **Upper:** Not determined.

- **Steam pressure at 20 °C:** 40 mbar

- **Density at 20 °C** 1.360 g/cm³
 - **Relative density** Not determined.
 - **Vapour density** Not determined.
 - **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

- **Water:** Not miscible or difficult to mix

- **Partition coefficient: n-octanol/water:** Not determined.

· **Viscosity:**

- **dynamic:** Not determined.
- **kinematic:** Not determined.

· **Solvent content:**

- **Solids content:** 26.8 %

- **Other information** No further relevant information available.

AUS

(Contd. on page 6)



**Safety Data Sheet
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Printing date 01.02.2021

Version number 5

Revision: 01.02.2021

Trade name: Signum opaque F

(Contd. of page 5)

10 Stability and Reactivity

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

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

11 Toxicological Information

- **Information on toxicological effects**
 - **Acute toxicity**

· LD/LC50 values that are relevant for classification:		
4687-94-9 (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)]diacrylate		
Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)
55818-57-0 Bisphenol A Diglycidylether Diacrylate (BADGE-DA)		
Oral	LD50	>5000 mg/kg (rat) (OECD 401)
Dermal	LD50	>5000 mg/kg (rabbit)
Sensitisation	Sensib.	(human) sensib. (mouse) (LLNA)
109-16-0 triethylen glycol dimethacrylate		
Oral	LD50	> 5000 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (mouse)
27813-02-1 methacrylic acid, monoester with propane-1,2-diol		
Oral	LD50	> 2000 mg/kg (rat)
Dermal	LD50	> 5000 mg/kg (rab)
13463-67-7 Titanium dioxide		
Oral	LD50	> 5000 mg/kg (rat) (OECD 425)
Dermal	LD50	> 5000 mg/kg (rabbit)
Inhalative	LC50/4 h	> 6.8 mg/l (rat)
75980-60-8 diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide		
Oral	LD50	> 5000 mg/kg (rat)

- **Primary irritant effect:**
 - **Skin corrosion/irritation** No irritant effect.
 - **Serious eye damage/irritation** Irritant effect.
- **Respiratory or skin sensitisation**

Sensitising effect by skin contact is possible by prolonged exposure.
- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Irritant

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(Contd. on page 7)

**Safety Data Sheet
according to WHS Regulations**

Printing date 01.02.2021

Version number 5

Revision: 01.02.2021

Trade name: Signum opaque F

(Contd. of page 6)

12 Ecological Information· **Toxicity**· **Aquatic toxicity:****55818-57-0 Bisphenol A Diglycidylether Diacrylate (BADGE-DA)**

EC50/72h > 110 mg/l (algae) (OECD 201)

LC50/96h > 79 mg/l (fish) (OECD 203)

109-16-0 triethylen glycol dimethacrylate

EC50/72h > 100 mg/l (algae)

27813-02-1 methacrylic acid, monoester with propane-1,2-diol

EC50/72h > 97.2 mg/l (algae)

EC50/48h 380 mg/l (daphnia)

13463-67-7 Titanium dioxide

EC50/72h (static) 16 mg/l (algae) (EPA-600-9/78-018)

EC50/48h (static) > 100 mg/l (daphnia) (OECD 202)

LC50/96h (static) > 100 mg/l (fish) (OECD 203)

75980-60-8 diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide

EC50/48h 10 100 mg/l (algae)

10 - 100 mg/l (daphnia)

· **Persistence and degradability** No further relevant information available.· **Behaviour in environmental systems:**· **Bioaccumulative potential** No further relevant information available.· **Mobility in soil** No further relevant information available.· **Additional ecological information:**· **General notes:**

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

· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.**13 Disposal considerations**· **Waste treatment methods**· **Recommendation**

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

· **Uncleaned packagings:**· **Recommendation:** Disposal must be made according to official regulations.**14 Transport information**· **UN-Number**· **ADG, ADN, IMDG, IATA**

Void

· **UN proper shipping name**· **ADG, ADN, IMDG, IATA**

Void

(Contd. on page 8)

AUS



**Safety Data Sheet
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Trade name: Signum opaque F

(Contd. of page 7)

· Transport hazard class(es)	
· ADG, ADN, IMDG, IATA	
· Class	Void
· Packing group	
· ADG, IMDG, IATA	Void
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	-
· UN "Model Regulation":	Void

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **GHS label elements**
The product is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard-determining components of labelling:**
Bisphenol A Diglycidylether Diacrylate (BADGE-DA)
benzenamine, N,N,2,4,6-pentamethyl-
methacrylic acid, monoester with propane-1,2-diol
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
- **Hazard statements**
Causes serious eye irritation.
May cause an allergic skin reaction.
- **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.

(Contd. on page 9)

AUS



**Safety Data Sheet
according to WHS Regulations**

Printing date 01.02.2021

Version number 5

Revision: 01.02.2021

Trade name: Signum opaque F

(Contd. of page 8)

· Relevant phrases

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H361 Suspected of damaging fertility or the unborn child.

· Abbreviations and acronyms:

ADR: Accord européen sur le transport 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 (REACH)

PNEC: Predicted No-Effect Concentration (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. 2A: Serious eye damage/eye irritation – Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

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

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· * Data compared to the previous version altered.

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