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### Safety Data Sheet according to WHS Regulations

Printing date 29.02.2024 Version number 5 Revision: 29.02.2024

Hazardous according to criteria of Australian Safety and Compensation Council.

#### 1 Identification

- · Product identifier
  - · Trade name: Signum zirconia bond II
  - · Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.
    - · Application of the substance / the mixture Zirconia-Resin Bonding System
- · Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:

Kulzer Australia Pty Ltd Unit 20. 53 Lorraine St PEAKHURST NSW 2210

Australia

Tel: +61 (02) 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

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

Skin Irrit. 2 H315 Causes skin irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

- · Label elements
  - GHS label elements

The product is classified and labelled according to the Globally Harmonised System (GHS).

· Hazard pictograms





GHS02 GHS07

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

methyl methacrylate

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

Hazard statements

Highly flammable liquid and vapour.

Causes skin irritation.

May cause an allergic skin reaction.

May cause respiratory irritation.

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Avoid breathing dust/fume/gas/mist/vapours/spray.

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Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection. If skin irritation or rash occurs: Get medical advice/attention.

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

### 3 Composition and Information on Ingredients

- Chemical characterisation: Mixtures
  - · Description: Product based on methacrylates

	Dangerous components:		
	methyl methacrylate	<i>≥</i> 50- <i>≤</i> 75%	
	Flam. Liq. 2, H225 Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335		
72869-86-4	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate Skin Sens. 1B, H317	25-50%	
75980-60-8	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide Repr. 2, H361 Skin Sens. 1B, H317	≥1-<3%	
614-45-9	tert-butyl perbenzoate Org. Perox. C, H242 Acute Tox. 4, H332; Skin Irrit. 2, H315; Skin Sens. 1, H317	≥0.1-<1%	

SVHC

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

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

#### 4 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.
- · After swallowing

Rinse out mouth and then drink plenty of water.

In case of persistent symptoms consult doctor.

Product based on methacrylates

- · Information for doctor
  - · Most important symptoms and effects, both acute and delayed No further relevant information available.

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

### 5 Fire Fighting Measures

- · Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water.
- For safety reasons unsuitable extinguishing agents Water.
- · Special hazards arising from the substance or mixture

Can form explosive gas-air mixtures.

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

- · Protective equipment: No special measures required.
- · Additional information -

#### 6 Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Avoid contact with eyes and skin.

Wear protective equipment. Keep unprotected persons away.

- · 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.

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### 7 Handling and Storage

- · Handling
  - · Precautions for safe handling Keep containers tightly sealed.
  - Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- · Storage
  - · Requirements to be met by storerooms and containers: Store in cool location.
  - · Information about storage in one common storage facility: Not required.
  - · Further information about storage conditions:

Store cool (not above 25 °C).

Store in cool, dry conditions in well sealed containers.

· 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 section 7.

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Compone	nts with critical values	that require m	(Contd. of pa onitoring at the workplace:	
	ethyl methacrylate	arat regaine in	omornig at the northinger	
WES Sho	rt-term value: 416 mg/m³,	, 100 ppm		
Long-term value: 208 mg/m³, 50 ppm Sen				
· DNE	· DNELs			
80-62-6 m	ethyl methacrylate			
Oral	general population, long	term, systemic	8.2 mg/Kg (not defined)	
Dermal	worker industrial, long term, systemic		13.67 mg/Kg/d (not defined)	
	general population, long term, systemic		8.2 mg/Kg/d (not defined)	
Inhalative	worker industrial, acute, local		416 mg/m3 (not defined)	
	worker industrial, long te	rm, systemic	348.4 mg/m3 (not defined)	
	worker industrial, long te	rm, local	208 mg/m3 (not defined)	
	general population, acute	e, local	208 mg/m3 (not defined)	
	general population, long	term, systemic	74.3 mg/m3 (not defined)	
72869-86-	4 7,7,9(or 7,9,9)-trime bismethacrylate	thyl-4,13-dio	xo-3,14-dioxa-5,12-diazahexadecane-1,16-d	
Oral	general population, long	term, systemic	0.3 mg/Kg (not defined)	
Dermal	worker industrial, long te	rm, systemic	1.3 mg/Kg/d (not defined)	
	general population, long term, systemic		0.7 mg/Kg/d (not defined)	
Inhalative	worker industrial, long te	rm, systemic	3.3 mg/m3 (not defined)	
	, , ,		0.6 mg/m3 (not defined)	
75980-60-	8 diphenyl(2,4,6-trimeth	ylbenzoyl)pho	osphine oxide	
Oral	general population, long	term, systemic	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)	
· PNE	Cs			
80-62-6 m	ethyl methacrylate			
freshwater	•	0.94 mg/l (not		
marine wa	ter	0.094 mg/l (no	•	
sewage treatment plant		10 mg/l (not de	efined)	
sediment, dry weight, freshwater		10.2 mg/Kg (not defined)		
sediment, dry weight, marine water		0.102 mg/Kg (not defined)		
soil, dry weight		1.48 mg/Kg (n	ot defined)	
72869-86-	4 7,7,9(or 7,9,9)-trime bismethacrylate	thyl-4,13-dio	xo-3,14-dioxa-5,12-diazahexadecane-1,16-d	
freshwater		0.01 mg/l (not	defined)	
marine wa	ter	0.001 mg/l (no	t defined)	
sewage treatment plant		3.61 mg/l (not	defined)	



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sediment, dry weight, freshwater	4.56 mg/Kg (not defined)
sediment, dry weight, marine water	0.46 mg/Kg (not defined)
soil, dry weight	0.91 mg/Kg (not defined)
75980-60-8 diphenyl(2,4,6-trimeth	ylbenzoyl)phosphine oxide
freshwater	0.0014 mg/l (not defined)
marine water	0.00014 mg/l (not defined)
sediment, dry weight, freshwater	0.115 mg/Kg (not defined)
sediment, dry weight, marine water	0.0115 mg/Kg (not defined)
soil, dry weight	0.0222 mg/Kg (not defined)

<sup>·</sup> Additional information: The lists that were valid during the compilation were used as basis.

#### · Personal protective equipment

### General protective and hygienic measures

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 neccessary with efficient local exhaust. If exposition to vapours is possible, use breathing protective mask (filter A).

#### Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the

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. Solvent resistant gloves

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

Eve protection: Safety glasses

· Body protection: Light weight protective clothing



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#### 9 Physical and Chemical Properties

· General Information

· Appearance: Form: Fluid Colourless · Colour: · Smell: Ester-like

· Odour threshold: Not determined.

Mixture is non-soluble (in water). pH-value:

Change in condition

Melting point/freezing point: Not determined

Initial boiling point and boiling range: 100.3 °C ash point:

· Flash point:

Inflammability (solid, gaseous) Not applicable. 430.0 °C Auto-ignition temperature:

Decomposition temperature: Not determined.

·SAPT

Signum zirconia bond II > 60 °C

· Self-inflammability: Product is not selfigniting.

Explosive properties: Product is not explosive. However, formation of explosive air/

vapour mixtures is possible.

Critical values for explosion:

Lower: 2.1 Vol % Upper: 12.5 Vol % Steam pressure at 20 °C: 47 hPa 1.000 g/cm<sup>3</sup> · Density at 20 °C 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.

· Other information No further relevant information available.

## 10 Stability and Reactivity

· Reactivity No further relevant information available.

- 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

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

· LD/	· LD/LC50 values that are relevant for classification:				
80-62-6 m	80-62-6 methyl methacrylate				
Oral	LD50	~7,900 mg/kg (rat)			
Dermal	LD50	>5,000 mg/kg (guinea pig) (OECD 402)			
Inhalative	LC50/4 h	29.8 mg/l (rat)			
72869-86-	72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate				
Oral	LD50	>5,000 mg/kg (rat) (OECD 401)			
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)			
75980-60-	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)			
614-45-9 t	614-45-9 tert-butyl perbenzoate				
Oral	LD0	2,000 mg/kg (rat) (OECD 423)			
Dermal	LD0	2,000 mg/kg (rat) (OECD 402)			
Inhalative	LC0/4h	1.01 mg/L (rat) (OECD 439)			
	LC100/4h	4.9 mg/L (rat) (OECD 439)			

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

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#### 12 Ecological Information · Toxicity Aquatic toxicity: 80-62-6 methyl methacrylate 49 mg/L (daphnia) (OECD 211) EC50/21d EC50/48h 69 mg/l (daphnia) (EPA OTS 797.1300) NOEC / 21d | 37 mg/l (daphnia) (OECD 211) ErC50 / 72 h >110 mg/l (algae) (OECD 201) NOEC / 72h | 110 mg/l (algae) (OECD 201) NOEC / 48h | 48 mg/l (daphnia) (EPA OTS 797.1300) EbC50 / 72h | >110 mg/l (algae) (OECD 201) NOEC/ 35d | 9.4 mg/L (fish) (OECD 210) 33.7 mg/L (fish) (OECD 210) LC50/ 35d 72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate EC50/48h >1.2 mg/l (daphnia) (OECD 202) LC50/96h 10.1 mg/l (fish) (OECD 203) ErC50 / 72 h > 0.68 mg/l (algae) (OECD 201) NOEC / 72h | 0.21 mg/l (algae) (OECD 201) 75980-60-8 diphenyl(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) 1.56 mg/L (algae) (OECD 201) ErC10/72h Persistence and degradability 80-62-6 methyl methacrylate Biodegradation 94 % /14d (not defined) (OECD 301C) 72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate Biodegradation 22 % /28d (not defined) (OECD 301B; ISO/ 9439/ EEC 92/69/V, C.4-C) 75980-60-8 diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide Biodegradation | 0-10 % /28d (not defined) (OECD 301F; ISO 9408/ EEC 92/69/V, C.4-D)

#### · Bioaccumulative potential

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

Bloconcentration factor (BCF) 47-55 (not defined)

- · Mobility in soil No further relevant information available.
- · Results of PBT and vPvB assessment

Behaviour in environmental systems:

- · PBT: Not applicable.
- vPvB: Not applicable.

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· Other adverse effects No further relevant information available.

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### 13 Disposal considerations

- · 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.

UN-Number · ADG, IMDG, IATA	UN1993
· UN proper shipping name · ADG	1993 FLAMMABLE LIQUID, N.O.S., special provision 640D (METHYL METHACRYLATE MONOME STABILIZED, 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,1 dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylat
· IMDG	FLAMMABLE LIQUID, N.O.S. (METH) METHACRYLATE MONOMER, STABILIZED, 7,7,9 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,1 diazahexadecane-1,16-diyl bismethacrylate), MARII POLLUTANT
·IATA	FLAMMABLE LIQUID, N.O.S. (METH) METHACRYLATE MONOMER, STABILIZED, 7,7,9, 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,1 diazahexadecane-1,16-diyl bismethacrylate)



Class 3 (F1) Flammable liquids.

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· Label	3
· IMDG	
· Class · Label	3 Flammable liquids. 3
· IATA	
· Class · Label	3 Flammable liquids. 3
Packing group ADG, IMDG, IATA	II
Environmental hazards: Marine pollutant:	No Symbol (fish and tree)
· Special marking (ADG):	Symbol (fish and tree)
Special precautions for user Kemler Number: EMS Number: Stowage Category	Warning: Flammable liquids. 33 F-E, <u>S-E</u> B
Transport in bulk according to Annex Marpol and the IBC Code	II of Not applicable.
· Transport/Additional information:	-
· ADG · Limited quantities (LQ) · Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
Transport category Tunnel restriction code	2 D/E
· IMDG	
· Limited quantities (LQ) · Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1993 FLAMMABLE LIQUID, N.O.S. (METHY) METHACRYLATE MONOMER, STABILIZED, 7,7,9(OI 7,9,9)-TRIMETHYL-4,13-DIOXO-3,14-DIOXA-5,12-

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DIAZAHEXADECANE-1,16-DIYL BISMETHACRYLATE). 3. II

#### 15 Regulatory information

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

· Austi	ralian Inventory of Industrial Chemicals
80-62-6	methyl methacrylate
41137-60-4	diurethandimethacrylate
75980-60-8	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
128-37-0	2,6-di-tert-butyl-p-cresol

- Directive 2012/18/EU
  - Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t
  - Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t
- 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.

#### · Relevant phrases

H225 Highly flammable liquid and vapour.

H242 Heating may cause a fire.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H361 Suspected of damaging fertility or the unborn child.

#### · Abbreviations and acronyms:

Abbreviations and actoryms.

SAPT: Self Accelerating Polymerisation 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
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)
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
SVHC: Substances of Very High Concern vPvB: very Persistent and very Bioaccumulative Flam. Liq. 2: Flammable liquids – Category 2

Org. Perox. C: Organic peroxides - Type C/D Acute Tox. 4: Acute toxicity - Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2 Skin Sens. 1: Skin sensitisation – Category 1

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

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Repr. 2: Reproductive toxicity – Category 2 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 \* \* Data compared to the previous version altered.