



**Safety Data Sheet  
according to WHS Regulations**

Printing date 10.02.2018

Version number 4

Revision: 10.02.2018

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:

Heraeus Kulzer Australia Pty Ltd  
Unit 32  
11 – 21 Underwood Rd  
HOMEBUSH NSW 2140  
Australia

Tel: +61 (0) 2 9764 5222

- Informing department: see above
- Emergency telephone number: Emergency contact number: 13 11 26 (24 hours)

## 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  
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 release to the environment.  
Wear protective gloves/protective clothing/eye protection/face protection.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
Call a POISON CENTER/doctor if you feel unwell.  
Store in a well-ventilated place. Keep cool.

#### · Other hazards -

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

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### 3 Composition and Information on Ingredients

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

- **Dangerous components:**

CAS: 80-62-6 EINECS: 201-297-1	methyl methacrylate Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	50-75%
CAS: 75980-60-8 EINECS: 278-355-8	diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide Repr. 2, H361; Skin Sens. 1B, H317	0-5%

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

### 4 First Aid Measures

- **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.
  - **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.
  - **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, sand, extinguishing powder. Do not use water.
  - **For safety reasons unsuitable extinguishing agents**  
Water.  
Water with a full water jet.
- **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.
- **Advice for firefighters**
  - **Protective equipment:** No special measures required.
- **Additional information** -

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Prevent material from reaching sewage system, holes and cellars.

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- **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:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
  - **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 item 7.
- **Control parameters**

· **Components with critical values that require monitoring at the workplace:**

**80-62-6 methyl methacrylate**

NES (Australia)	Short-term value: 416 mg/m <sup>3</sup> , 100 ppm Long-term value: 208 mg/m <sup>3</sup> , 50 ppm
PEL (USA)	410 mg/m <sup>3</sup> , 100 ppm
REL (USA)	410 mg/m <sup>3</sup> , 100 ppm
TLV (USA)	Short-term value: 410 mg/m <sup>3</sup> , 100 ppm Long-term value: 205 mg/m <sup>3</sup> , 50 ppm
SEN	

· **DNELs**

**80-62-6 methyl methacrylate**

Dermal	worker industr., l.te., syst.	74.3 mg/Kg/d (human)
Inhalative	worker industr., l.te., syst.	210 mg/m <sup>3</sup> (human)

· **PNECs**

**80-62-6 methyl methacrylate**

freshwater	0.94 mg/l (aqua)
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· **Additional information:** The lists that were valid during the compilation were used as basis.

- **Exposure controls**
  - **Personal protective equipment**
    - **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.

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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:**

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

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 through 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 protection:** not absolutely necessary

· **Body protection:** Light weight protective clothing

## 9 Physical and Chemical Properties

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

· **General Information**

· **Appearance:**

· **Form:**

Fluid

· **Colour:**

Colourless

· **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:**

10 °C

· **Inflammability (solid, gaseous)**

Not applicable.

· **Ignition temperature:**

430.0 °C

· **Decomposition temperature:**

Not determined.

· **Self-inflammability:**

Product is not selfigniting.

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· <b>Explosive properties:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
· <b>Critical values for explosion:</b>	
· <b>Lower:</b>	2.1 Vol %
· <b>Upper:</b>	12.5 Vol %
· <b>Steam pressure at 20 °C:</b>	47 hPa
· <b>Density at 20 °C</b>	1.000 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with</b>	
· <b>Water:</b>	Not miscible or difficult to mix
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
· <b>dynamic:</b>	Not determined.
· <b>kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
· <b>Solids content:</b>	8.0 %
· <b>Other information</b>	No further relevant information available.

### 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**

· <b>LD/LC50 values that are relevant for classification:</b>		
<b>80-62-6 methyl methacrylate</b>		
Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rab)
Inhalative	LC50/4 h	29.8 mg/l (rat)
<b>41137-60-4 diurethandimethacrylate</b>		
Oral	LD50	>5000 mg/kg (rat)
<b>75980-60-8 diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide</b>		
Oral	LD50	> 5000 mg/kg (rat)

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- **Primary irritant effect:**
  - **Skin corrosion/irritation** Irritant for skin and mucous membranes.
  - **Serious eye damage/irritation** No irritant effect.
  - **Respiratory or skin sensitisation** Sensitization possible by skin contact.
- **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

**12 Ecological Information**

· **Toxicity**

· **Aquatic toxicity:**

**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 product to reach ground water, water bodies or sewage system.  
Danger to drinking water if even small quantities leak into soil.
- **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, IMDG, IATA** 1247

· **UN proper shipping name**

· **ADG** 1247 METHYL METHACRYLATE MONOMER, STABILIZED, solution  
· **IMDG, IATA** METHYL METHACRYLATE MONOMER, STABILIZED, solution

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· <b>Transport hazard class(es)</b>	
· <b>ADG</b>	
	
· <b>Class</b>	3 (F1) Flammable liquids.
· <b>Label</b>	3
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	3 Flammable liquids.
· <b>Label</b>	3
· <b>Packing group</b>	
· <b>ADG, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	
· <b>Warning:</b>	Flammable liquids.
· <b>Kemler Number:</b>	339
· <b>EMS Number:</b>	F-E, S-D
· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b>	
	Not applicable.
· <b>Transport/Additional information:</b>	
	-
· <b>UN "Model Regulation":</b>	
	UN1247, METHYL METHACRYLATE MONOMER, STABILIZED, solution, 3, II

**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**



GHS02 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**

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

· **Hazard statements**

Highly flammable liquid and vapour.

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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 release to the environment.

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

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Call a POISON CENTER/doctor if you feel unwell.

Store in a well-ventilated place. Keep cool.

· **Directive 2012/18/EU**

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5.000 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50.000 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.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

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

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

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

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.**