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

- **Product identifier**
  - **Trade name:** Palabond

- **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:** 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 Hazards identification

- **Classification of the substance or mixture**
  Flam. Liq. 2 H225 Highly flammable liquid and vapour.
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Dam. 1 H318 Causes serious eye damage.
  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 GHS05 GHS07

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  methyl methacrylate
  methacrylic acid

- **Hazard statements**
  Highly flammable liquid and vapour.
  Causes skin irritation.
  Causes serious eye damage.
  May cause an allergic skin reaction.
  May cause respiratory irritation.

- **Precautionary statements**
  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

(Contd. on page 2)
Trade name: Palabond

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.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.

Other hazards -

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterisation: Mixtures

Description: Product based on methacrylates

Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS:</th>
<th>Ingredient</th>
<th>H-Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-62-6</td>
<td>201-297-1</td>
<td>methyl methacrylate</td>
<td>Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335</td>
</tr>
<tr>
<td>79-41-4</td>
<td>201-204-4</td>
<td>methacrylic acid</td>
<td>Skin Corr. 1A, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; STOT SE 3, H335</td>
</tr>
<tr>
<td>2082-81-7</td>
<td>218-218-1</td>
<td>tetramethylene dimethacrylate</td>
<td>Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
</tr>
</tbody>
</table>

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. If symptoms persist, consult doctor.
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 Firefighting 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.
- **Methods and material for containment and cleaning up**: Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues). Do not flush with water or aqueous cleansing agents. Send for recovery or disposal in suitable containers.
- **Reference to other sections**
  - See Section 13 for information on disposal.
  - See Section 8 for information on personal protection equipment.

* 7 Handling and storage

- **Handling**
  - **Precautions for safe handling**
    - Keep containers tightly sealed.
    - Keep away from heat and direct sunlight.
  - **Information about protection against explosions and fires**:
    - Keep ignition sources away - Do not smoke.
    - Protect from heat.
    - 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.
    - Protect from heat and direct sunlight.

(Contd. on page 4)
Trade name: Palabond

- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/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:**

    | Substance | NES (Australia) | PEL (USA) | REL (USA) | TLV (USA) |
    |-----------|----------------|-----------|-----------|-----------|
    | 80-62-6 methyl methacrylate | 410 mg/m³, 100 ppm | 410 mg/m³, 100 ppm | 410 mg/m³, 100 ppm | Short-term value: 410 mg/m³, 100 ppm |
    | | | | | Long-term value: 205 mg/m³, 50 ppm |
    | 79-41-4 methacrylic acid | 70 mg/m³, 20 ppm | 70 mg/m³, 20 ppm | 70 mg/m³, 20 ppm | |

- **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/m³ (human)

- **PNECs**

  - **80-62-6 methyl methacrylate**
    - freshwater 0.94 mg/l (aqua)

- **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.
      - 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

(Contd. on page 5)
Trade name: Palabond

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.

- **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 cannot be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**
The exact breakthrough 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:**
Protective goggles are recommended.
Tightly sealed safety glasses.

- **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:** Characteristic
      - **Odour threshold:** Not determined.
  - **pH-value:** Not determined.
  - **Change in condition**
    - **Melting point/Melting range:** Not determined
    - **Boiling point/Boiling range:** 100 °C
  - **Flash point:** 10 °C
  - **Inflammability (solid, gaseous):** Not applicable.
  - **Ignition temperature:** 370.0 °C
  - **Decomposition temperature:** Not determined.
  - **Self-inflammability:** Product is not selfigniting.
  - **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
  - **Critical values for explosion:**
    - **Lower:** 2.1 Vol %
### 43.0.7

- **Upper:** 12.5 Vol %
- **Steam pressure at 20 °C:** 47 hPa
- **Density at 20 °C:** 0.940 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 at 20 °C:** 1 mPas
  - **kinematic:** Not determined.
- **Solvent content:**
  - **Water:** 0.2 %
- **Solids content:**
  - **Other information:** 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**
  - **LD/LC50 values that are relevant for classification:**
    - **80-62-6 methyl methacrylate**
      - Oral LD50 >5000 mg/kg (rat)
      - Dermal LD50 >5000 mg/kg (rab)
      - Inhalative LC50/4 h 29.8 mg/l (rat)
    - **79-41-4 methacrylic acid**
      - Oral LD50 2260 mg/kg (rat)
      - Dermal LD50 500 mg/kg (rab)
Trade name: Palabond

<table>
<thead>
<tr>
<th>Trade name</th>
<th>2082-81-7 tetramethylene dimethacrylate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>10120 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **Skin corrosion/irritation** Irritant for skin and mucous membranes.
  - **Serious eye damage/irritation** 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:** No further relevant information available.
  - **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.

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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.

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

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### 14 Transport information

- **UN-Number**
  - **ADG, IMDG, IATA** 2924
Trade name: Palabond

· UN proper shipping name
  · ADG 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (METHYL METHACRYLATE MONOMER, STABILIZED, METHACRYLIC ACID, STABILIZED)
  · IMDG, IATA FLAMMABLE LIQUID, CORROSIVE, N.O.S. (METHYL METHACRYLATE MONOMER, STABILIZED, METHACRYLIC ACID, STABILIZED)

· Transport hazard class(es)
  · ADG Class 3 (FC) Flammable liquids.
  · Label 3+8
  · IMDG, IATA Class 3 Flammable liquids.
  · Label 3+8

· Packing group
  · ADG, IMDG, IATA II

· Environmental hazards:
  · Marine pollutant: No

· Special precautions for user
  · Kemler Number: Warning: Flammable liquids.
  · EMS Number: 338 F-E,S-C

· Transport in bulk according to Annex II of Marpol and the IBC Code
  · Not applicable.

· Transport/Additional information: -

· UN "Model Regulation": UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S. (METHYL METHACRYLATE MONOMER, STABILIZED, METHACRYLIC ACID, STABILIZED), 3 (8), 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  GHS05  GHS07

Signal word Danger

Hazard-determining components of labelling:
methyl methacrylate
methacrylic acid

Hazard statements
Highly flammable liquid and vapour.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.

Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
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.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.

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.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

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
Trade name: **Palabond**

- 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
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Corr. 1A: Skin corrosion/irritation – Category 1A
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Dam. 1: Serious eye damage/eye irritation – Category 1
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Skin Sens. 1: Skin sensitisation – Category 1
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

* Data compared to the previous version altered.