1 Identification

- Product identifier
  - **Trade name:** Meliodent Rapid Repair Liquid

- Application of the substance / the mixture
  - Manufacture of dental prothesis

- Details of the supplier of the safety data sheet
  - **Manufacturer/Supplier:**
    Kulzer GmbH
    Leipziger Straße 2, 63450 Hanau (Germany)
  - **Tel.: +49 (0)800 4372522**

  - **Information department:**
    Tel. +1 (800) 431-1785 Fax: +1 (800) 522-1545
    e-mail: customer.servicehkna@kulzer-dental.com

  - **Emergency telephone number:**
    Emergency CONTACT (24-Hour-Number)
    GBK/Infotrac ID 105860: (domestic) 1 800 535 5053 or international (001) 352 323 3500

2 Hazard(s) identification

- Classification of the substance or mixture
  - Flammable Liquids - Category 2 H225 Highly flammable liquid and vapour.
  - Skin Irritation - Category 2 H315 Causes skin irritation.
  - Skin Sensitizer - Category 1 H317 May cause an allergic skin reaction.
  - Specific Target Organ Toxicity - Single Exposure - Category 3 H335 May cause respiratory irritation.

- Label elements
  - **GHS label elements**
    The product is classified and labeled according to the Globally Harmonized System (GHS).

  - **Hazard pictograms**
    - GHS02
    - GHS07

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - methyl methacrylate
  - tetramethylene dimethacrylate
  - 2-(2H-Benzotriazol-2-yl)-4-methylphenol

- **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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - Use explosion-proof [electrical/ventilating/lighting] equipment.
  - Avoid breathing dust/fume/gas/mist/vapours/spray.

(Contd. on page 2)
Trade name: Meliodent Rapid Repair Liquid

43.0.7 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Specific treatment (see on this label). Store locked up.

- Hazard description:
  - Canadian Hazard Symbols
    - B2 - Flammable liquid
    - D2B - Toxic material causing other toxic effects

- Classification system
  - NFPA ratings for USA (scale 0-4)
    - Health = 1
    - Fire = 3
    - Reactivity = 0
  - HMIS-Ratings (Scale 0-4)
    - Health = 1
    - Fire = 3
    - Reactivity = 0

- Other hazards -

3 Composition/information on ingredients

- Chemical characterization: Mixtures
  - Description: Composition based on methacrylates

- Dangerous components:
  - 80-62-6 methyl methacrylate
    - Flammable Liquids - Category 2, H225; Skin Irritation - Category 2, H315; Skin Sensitizer - Category 1, H317; Specific Target Organ Toxicity - Single Exposure - Category 3, H335
    - >90% w/w
  - 2082-81-7 tetramethylene dimethacrylate
    - Skin Irritation - Category 2, H315; Eye Irritation - Category 2A, H319; Specific Target Organ Toxicity - Single Exposure - Category 3, H335
    - 0-5% w/w

- 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 complaints.
  - After skin contact Immediately wash with water and soap and rinse thoroughly.
  - After eye contact Rinse opened eye for several minutes under running water.
Trade name: Meliodent Rapid Repair Liquid

- After swallowing
  Rinse out mouth and then drink plenty of water.
  If symptoms persist 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, 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.
- 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 seepage into sewage system, workpits 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
- Reference to other sections
  No dangerous substances are released.
  See Section 7 for information on safe handling
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Handling
  - Precautions for safe handling
    Keep receptacles tightly sealed.
    Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
    Please observe the additional instructions in the product’s instructions for use.
  - Information about protection against explosions and fires:
    Keep ignition sources away - Do not smoke.
    Protect against electrostatic charges.
Trade name: Meliodent Rapid Repair Liquid

· Conditions for safe storage, including any incompatibilities
  · Storage
    · Requirements to be met by storerooms and receptacles: Store in a cool location.
    · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions:
    Keep cool, if possible (not above 25 °C).
    Store in cool, dry conditions in well sealed receptacles.
  · 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 limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>80-62-6 methyl methacrylate</th>
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<tbody>
<tr>
<td>EL ()</td>
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<tr>
<td>Short-term value: 125 ppm</td>
</tr>
<tr>
<td>Long-term value: 50 ppm</td>
</tr>
<tr>
<td>Skin, Z, A</td>
</tr>
</tbody>
</table>

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

· Exposure controls

  · General protective and hygienic measures
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing
    Wash hands before breaks and at the end of 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.

· 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.
Trade name: Meliodent Rapid Repair Liquid

- **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:** 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
    - Color: Colorless
  - **Odor:** Characteristic
  - **Odor threshold:** Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - **Melting point/Melting range:** undetermined
  - **Boiling point/Boiling range:** 100 °C (212 °F)

- **Flash point:** 10 °C (50 °F)
- **Flammability (solid, gaseous)** Not applicable.
- **Ignition temperature:** 430.0 °C (806 °F)
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**
  - **Lower:** 2.1 Vol %
  - **Upper:** 12.5 Vol %

- **Vapor pressure at 20 °C (68 °F):** 47 hPa (35 mm Hg)

- **Density at 20 °C (68 °F):** 0.950 g/cm³ (7.928 lbs/gal)
  - **Relative density** Not determined.
  - **Vapor 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.
Trade name: Meliodent Rapid Repair Liquid

· Viscosity:
  · dynamic at 20 °C (68 °F): 1 mPas
  · kinematic: Not determined.

· Solvent content:

· Solids content: 1.0 %

· Other information: No further relevant information available.

10 Stability and reactivity

· Reactivity: No further relevant information available.
· 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:
  Product might polymerize after considerable exceeding of recommended storage time or temperature.

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)

  2082-81-7 tetramethylene dimethacrylate
  Oral LD50 10120 mg/kg (rat)

  2440-22-4 2-(2H-Benzotriazol-2-yl)-4-methylphenol
  Oral LD50 >10000 mg/kg (rat)
  Dermal LD50 >2000 mg/kg (rat)

  99-97-8 N,N-dimethyl-p-toluidine
  Inhalative LC50/4 h 1400 mg/l (rat)

  · Primary irritant effect:
    · on the skin: Irritant to skin and mucous membranes.
    · Sensitization: Sensitization possible through skin contact.
    · Additional toxicological information: Irritant

  · Carcinogenic categories
    · IARC (International Agency for Research on Cancer)

  80-62-6 methyl methacrylate

(Contd. on page 7)
Trade name: Meliodent Rapid Repair Liquid

12 Ecological information

· Toxicity
  · Aquatic toxicity:
    2440-22-4 2-(2H-Benzotriazol-2-yl)-4-methylphenol
    EC50/72h >100 mg/l (algae)
    LC50/96h >0.17 mg/l (fish)
    99-97-8 N,N-dimethyl-p-toluidine
    LC50/96h 100 mg/l (fish)
  · Persistence and degradability: No further relevant information available.
  · Behavior 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 course or sewage system.
      Danger to drinking water if even small quantities leak into the ground.
  · 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.
    Small quantities can be polymerized with the matching system component(s) and the cured solid material can be disposed of with the regular garbage. Larger quantities must be disposed of following the regulations of the local authorities.
  · Uncleaned packagings:
    · Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number
  · DOT
  · TDG, IMDG, IATA

UN1247
1247

(Contd. on page 8)
**Trade name:** Meliodent Rapid Repair Liquid

| · UN proper shipping name | 1247 METHYL METHACRYLATE MONOMER, STABILIZED, solution |
| · TDG                     | IMDG, IATA                                             |
| · IMDG, IATA              | M ETHYL M ETH ACRYL ATE M ONOMER, STABILIZED, solution |

| · Transport hazard class(es) | 3 Flammable liquids |
| · DOT                      | 3 (F1) Flammable liquids |
| · Class                    | 3 Flammable liquids |
| · Label                    | 3 (F1) Flammable liquids |
| · IMDG, IATA               | 3 Flammable liquids |
| · Class                    | 3 Flammable liquids |
| · Label                    | 3 Flammable liquids |

| · Packing group            | DOT, TDG, IMDG, IATA, II |
| · Environmental hazards:   | Marine pollutant: No |
| · Special precautions for user | Warning: Flammable liquids |
| · Danger code (Kemler):    | 339, F-E, S-D |
| · EMS Number:              | |

| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | UN1247, Methyl methacrylate monomer, stabilized, solution, 3, II |
## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - SARA Section 355 (extremely hazardous substances)
  
  None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act)**
  None of the ingredients is listed.

- **GHS label elements**
  The product is classified and labeled according to the Globally Harmonized System (GHS).

  - **Hazard pictograms**
    
    ![GHS02](image) ![GHS07](image)

- **Signal word**
  Danger

- **Hazard-determining components of labeling:**
  - methyl methacrylate
  - tetramethylene dimethacrylate
  - 2-(2H-Benzotriazol-2-yl)-4-methylphenol

- **Hazard statements**
  - Highly flammable liquid and vapour.
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  - May cause respiratory irritation.

- **Precautionary statements**
  - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - Use explosion-proof [electrical/ventilating/lighting] equipment.
  - Avoid breathing dust/fume/gas/mist/vapours/spray.
  - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
  - Specific treatment (see on this label).
  - Store locked up.

- **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.
  - H319 Causes serious eye irritation.
  - H335 May cause respiratory irritation.

- **Date of preparation / last revision** 06/03/2017 / 2

- **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
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<thead>
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<th><strong>Trade name:</strong> Meliodent Rapid Repair Liquid</th>
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<tr>
<td>IATA: International Air Transport Association</td>
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<tr>
<td>EINECS: European Inventory of Existing Commercial Chemical Substances</td>
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<td>ELINCS: European List of Notified Chemical Substances</td>
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<td>CAS: Chemical Abstracts Service (division of the American Chemical Society)</td>
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<td>NFPA: National Fire Protection Association (USA)</td>
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<td>HMIS: Hazardous Materials Identification System (USA)</td>
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<tr>
<td>WHMIS: Workplace Hazardous Materials Information System (Canada)</td>
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<tr>
<td>LC50: Lethal concentration, 50 percent</td>
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<tr>
<td>LD50: Lethal dose, 50 percent</td>
</tr>
<tr>
<td>PBT: Persistent, Bioaccumulative and Toxic</td>
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<tr>
<td>vPvB: very Persistent and very Bioaccumulative</td>
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<td>* Data compared to the previous version altered.</td>
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