



**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 08/03/2020

Reviewed on 08/03/2020

## 1 Identification

· **Product identifier**

· **Trade name: Meliodent Rapid Repair Liquid**

· **Application of the substance / the mixture** *Manufacture of dental prosthesis*

· **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.servicehka@kulzer-dental.com](mailto:customer.servicehka@kulzer-dental.com)

· **Emergency telephone number:**

Emergency CONTACT (24-Hour-Number)

ID 105860: (domestic) 1 800 535 5053 or international (001) 352 323 3500

## 2 Hazard(s) identification

· **Classification of the substance or mixture**

Flam. Liq. 2 H225 *Highly flammable liquid and vapor.*

Skin Irrit. 2 H315 *Causes skin irritation.*

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

Carc. 2 H351 *Suspected of causing cancer.*

STOT SE 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 GHS08

· **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 vapor.*

*Causes skin irritation.*

*May cause an allergic skin reaction.*

*Suspected of causing cancer.*

*May cause respiratory irritation.*

· **Precautionary statements**

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

*Do not breathe dust/fume/gas/mist/vapors/spray.*

*Avoid release to the environment.*

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

*If skin irritation or rash occurs: Get medical advice/attention.*

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- **Classification system**
- **NFPA ratings for USA (scale 0-4)**



- **HMIS-Ratings (Scale 0-4)**



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

**3 Composition/information on ingredients**

- **Chemical characterization: Mixtures**
- **Description:**

-  
Composition based on methacrylates

- **Dangerous components:**

80-62-6	methyl methacrylate Flam. Liq. 2, H225 Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	>90%
2082-81-7	tetramethylene dimethacrylate Skin Sens. 1B, H317	≥1-≤5%
2440-22-4	2-(2H-Benzotriazol-2-yl)-4-methylphenol Skin Sens. 1, H317	≥0.1-<1%
99-97-8	N,N-dimethyl-p-toluidine Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 2, H330 Carc. 2, H351; STOT RE 2, H373	≥0.1-<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 inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact**  
Immediately 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. Then consult a doctor.
- **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** Allergic reactions

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· **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.  
Avoid contact with eyes and skin.
- **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.
- 
- **Protective Action Criteria for Chemicals**

· <b>PAC-1:</b>		
80-62-6	methyl methacrylate	17 ppm
· <b>PAC-2:</b>		
80-62-6	methyl methacrylate	120 ppm
· <b>PAC-3:</b>		
80-62-6	methyl methacrylate	570 ppm

**7 Handling and storage**

- **Handling**
  - **Precautions for safe handling**  
Please observe the additional instructions in the product's instructions for use.  
Keep receptacles tightly sealed.  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.  
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
  - **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.

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- **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:**
    - The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
    - At this time, the other constituents have no known exposure limits.

#### 80-62-6 methyl methacrylate

PEL	Long-term value: 410 mg/m <sup>3</sup> , 100 ppm
REL	Long-term value: 410 mg/m <sup>3</sup> , 100 ppm
TLV	Short-term value: 410 mg/m <sup>3</sup> , 100 ppm Long-term value: 205 mg/m <sup>3</sup> , 50 ppm DSEN

#### 99-97-8 N,N-dimethyl-p-toluidine

WEEL	Long-term value: 0.5 ppm
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· **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**
  - **Personal protective equipment**
    - **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.
      - 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.

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- **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:** Tightly sealed goggles.
- **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 °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 (35.3 mm Hg)

· **Density at 20 °C (68 °F):** 0.94613 g/cm<sup>3</sup> (7.89545 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.

· **Viscosity:**

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

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· **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	~7,900 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rab) (OECD 402)
Inhalative	LC50/4 h	29.8 mg/l (rat)

**2082-81-7 tetramethylene dimethacrylate**

Oral	LD50	10,066 mg/kg (rat) (OECD 401)
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**2440-22-4 2-(2H-Benzotriazol-2-yl)-4-methylphenol**

Oral	LD50	>10,000 mg/kg (rat) (OECD 423)
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**99-97-8 N,N-dimethyl-p-toluidine**

Oral	LD50	139 mg/kg (rat)
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- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
  - **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:** Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

80-62-6	methyl methacrylate	3
99-97-8	N,N-dimethyl-p-toluidine	2B

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

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**12 Ecological information**

· **Toxicity**

· **Aquatic toxicity:**

**80-62-6 methyl methacrylate**

EC50/48h 69 mg/l (daphnia)

LC50/96h 191 mg/l (fish)

**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.

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.

**14 Transport information**

· **UN-Number**

· **DOT, ADR, IMDG, IATA**

UN1247

· **UN proper shipping name**

· **DOT**

· **ADR**

Methyl methacrylate monomer, stabilized solution  
1247 METHYL METHACRYLATE MONOMER,  
STABILIZED solution

· **IMDG, IATA**

METHYL METHACRYLATE MONOMER,  
STABILIZED solution

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· **Transport hazard class(es)**

· **DOT**



· **Class** 3 Flammable liquids  
· **Label** 3

· **ADR**



· **Class** 3 (F1) Flammable liquids  
· **Label** 3

· **IMDG, IATA**



· **Class** 3 Flammable liquids  
· **Label** 3

· **Packing group**

· **DOT, ADR, IMDG, IATA** II

· **Environmental hazards:**

· **Marine pollutant:** No

· **Special precautions for user**

Warning: Flammable liquids

· **Hazard identification number (Kemler code):** 339  
· **EMS Number:** F-E, S-D  
· **Stowage Category:** B  
· **Stowage Code:** SW2 Clear of living quarters.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

-

· **ADR**

· **Excepted quantities (EQ)** Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml

· **IMDG**

· **Limited quantities (LQ)** 1L  
· **Excepted quantities (EQ)** Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500

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ml
· <b>UN "Model Regulation":</b> UN 1247 METHYL METHACRYLATE MONOMER, STABILIZED SOLUTION, 3, II

**15 Regulatory information**

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

· <b>SARA Section 355 (extremely hazardous substances)</b>
None of the ingredients is listed.

· <b>SARA Section 313 (specific toxic chemical listings)</b>
80-62-6 methyl methacrylate

· <b>Hazardous Air Pollutants</b>
80-62-6 methyl methacrylate

· <b>Proposition 65</b>
· <b>Prop 65 - Chemicals known to cause cancer</b>
99-97-8 N,N-dimethyl-p-toluidine

· <b>Chemicals known to cause reproductive toxicity for females:</b>
None of the ingredients is listed.

· <b>Chemicals known to cause reproductive toxicity for males:</b>
None of the ingredients is listed.

· <b>Chemicals known to cause developmental toxicity:</b>
None of the ingredients is listed.

· <b>Carcinogenicity categories</b>
· <b>EPA (Environmental Protection Agency)</b>
80-62-6 methyl methacrylate E, NL

· <b>TLV (Threshold Limit Value established by ACGIH)</b>
80-62-6 methyl methacrylate A4

· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
None of the ingredients is listed.

· **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 vapor.
- H301 Toxic if swallowed.
- H311 Toxic in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H330 Fatal if inhaled.
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.

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· **Date of preparation / last revision** 08/03/2020 / 3

· **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

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 2: Acute toxicity – Category 2

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

Skin Sens. 1: Skin sensitisation – Category 1

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

Carc. 2: Carcinogenicity – Category 2

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

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· **\* Data compared to the previous version altered.**

US