1 Identification

- **Product identifier**
  - **Trade name:** Palavit M Liquid
- **Application of the substance / the mixture** Auxiliary for 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**
  - 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.
  - STOT SE 3 H335 May cause respiratory irritation.
  - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
- **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
  - N,N-dimethyl-p-toluidine
- **Hazard statements**
  - Highly flammable liquid and vapor.
  - Causes skin irritation.
  - May cause an allergic skin reaction.
  - May cause respiratory irritation.
  - May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
  - Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  - Avoid breathing dust/fume/gas/mist/vapors/spray
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - In case of fire: Use for extinction: CO2, sand, extinguishing powder.
Trade name: Palavit M Liquid

IF ON SKIN: Wash with plenty of water. Store in a well-ventilated place.

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

Results of PBT and vPvB assessment

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

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: -

- Dangerous components:
  - 80-62-6 methyl methacrylate
    - Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335
    - > 90%
  - 99-97-8 N,N-dimethyl-p-toluidine
    - Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT RE 2, H373
    - 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
- General information
  - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- 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.
  - Immediately call a doctor.
- Information for doctor
  - Most important symptoms and effects, both acute and delayed
    - No further relevant information available.
Trade name: Palavit M Liquid

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:
    - Wear self-contained respiratory protective device.
    - Mount respiratory protective device.

- **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).
  - Dispose contaminated material as waste according to item 13.
  - Do not flush with water or aqueous cleansing agents.
  - Send for recovery or disposal in suitable receptacles.

- **Reference to other sections**
  - 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 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.

- **Conditions for safe storage, including any incompatibilities**

  - **Storage**
    - Requirements to be met by storerooms and receptacles:
      - Store in a cool location.
Trade name: Palavit M Liquid

- Information about storage in one common storage facility: Not required.
- Further information about storage conditions:
  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

<table>
<thead>
<tr>
<th>Components with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>80-62-6 methyl methacrylate</strong></td>
</tr>
<tr>
<td>PEL () 410 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>REL () 410 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>TLV () Short-term value: 410 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>Long-term value: 205 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>SEN</td>
</tr>
<tr>
<td><strong>99-97-8 N,N-dimethyl-p-toluidine</strong></td>
</tr>
<tr>
<td>WEEL () 0.5 ppm</td>
</tr>
</tbody>
</table>

- 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 sensitzation.
    - 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.
· 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 °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):
  · 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: Palavit M Liquid

- **Viscosity:**
  - dynamic at 20 °C (68 °F): 1 mPas
  - kinematic: Not determined.
- **Other information**
  No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**
  No further relevant information available.
- **Possibility of hazardous reactions**
  Exothermic polymerization
- **Conditions to avoid**
  Heat, flames and sparks.
- **Incompatible materials:**
  Reacts with peroxides and other radical forming substances
  Reacts with reducing agents
  Reacts with heavy metals
- **Hazardous decomposition products:**
  none
- **Additional information:**
  -

### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity:**
    - **LD/LC50 values that are relevant for classification:**
      | Methyl Methacrylate          |
      | Oral LD50 | >5000 mg/kg (rat) |
      | Dermal LD50 | >5000 mg/kg (rab) |
      | Inhalative LC50/4 h | 29.8 mg/l (rat) |
      | 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.
    - on the eye: No data available.
  - **Sensitization:**
    Sensitization possible through skin contact.
- **Additional toxicological information:**
  - Harmful
  - Irritant
- **Carcinogenic categories**
  - IARC (International Agency for Research on Cancer)
    - 80-62-6 methyl methacrylate
      - 3
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
Safety Data Sheet
acc. to OSHA HCS

Printing date 06/03/2017
Reviewed on 06/03/2017

Trade name: Palavit M Liquid

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

- Toxicity
- Aquatic toxicity:
  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, ADR, IMDG, IATA
  - UN1247

- UN proper shipping name
  - DOT, IMDG, IATA
  - METHYL METHACRYLATE MONOMER, STABILIZED, solution
  - ADR
  - 1247 METHYL METHACRYLATE MONOMER, STABILIZED, solution

(Contd. on page 8)
Trade name: **Palavit M Liquid**

<table>
<thead>
<tr>
<th>· Transport hazard class(es)</th>
<th>· DOT</th>
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</thead>
<tbody>
<tr>
<td>· Class</td>
<td>3 Flammable liquids</td>
</tr>
<tr>
<td>· Label</td>
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<table>
<thead>
<tr>
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<tbody>
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<td>· Class</td>
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<td>· Label</td>
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<td>3 (F1) Flammable liquids</td>
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<tr>
<th>· IMDG, IATA</th>
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<tbody>
<tr>
<td>· Class</td>
</tr>
<tr>
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</tr>
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<td>3 Flammable liquids</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>· Packing group</th>
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<tr>
<td>· DOT, ADR, IMDG, IATA</td>
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<table>
<thead>
<tr>
<th>· Environmental hazards:</th>
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<tbody>
<tr>
<td>· Marine pollutant:</td>
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<tr>
<td>No</td>
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<table>
<thead>
<tr>
<th>· Special precautions for user</th>
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<tbody>
<tr>
<td>· Danger code (Kemler):</td>
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<tr>
<td>339</td>
</tr>
<tr>
<td>· EMS Number:</td>
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<tr>
<td>F-E, S-D</td>
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<table>
<thead>
<tr>
<th>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</th>
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</thead>
<tbody>
<tr>
<td>Not applicable.</td>
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<tr>
<th>· Transport/Additional information:</th>
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<table>
<thead>
<tr>
<th>· UN &quot;Model Regulation&quot;:</th>
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<tbody>
<tr>
<td>UN1247, METHYL METHACRYLATE MONOMER, STABILIZED, solution, 3, II</td>
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</table>

**15 Regulatory information**

<table>
<thead>
<tr>
<th>· Safety, health and environmental regulations/legislation specific for the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>· SARA Section 355 (extremely hazardous substances)</td>
</tr>
</tbody>
</table>

None of the ingredients is listed.
Trade name: **Palavit M Liquid**

- **TSCA (Toxic Substances Control Act)** None of the ingredients is listed.
- **Cancerogenity categories**
- **TLV (Threshold Limit Value established by ACGIH)**
  - 80-62-6 methyl methacrylate

- **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
  - N,N-dimethyl-p-toluidine
- **Hazard statements**
  - Highly flammable liquid and vapor.
  - Causes skin irritation.
  - May cause an allergic skin reaction.
  - May cause respiratory irritation.
  - May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
  - Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  - Avoid breathing dust/fume/gas/mist/vapors/spray
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - In case of fire: Use for extinction: CO2, sand, extinguishing powder.
  - IF ON SKIN: Wash with plenty of water.
  - Store in a well-ventilated place.

- **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.
  - H331 Toxic if inhaled.
  - H335 May cause respiratory irritation.
  - H373 May cause damage to organs through prolonged or repeated exposure.
- **Date of preparation / last revision** 06/03/2017 / 2

(Contd. on page 10)
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)
HMIS: 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
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
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
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.