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

1.1 Product identifier
- Trade name: Technovit Universal Liquid

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  Kulzer GmbH
  Leipziger Straße 2, 63450 Hanau (Germany)
  Tel.: +49 (0)6181 9689-2570 (Wehrheim)

- Informing department: email: technik.wehrheim@kulzer-dental.com

1.4 Emergency telephone number:
Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008
  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.

2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
  The product is classified and labelled according to the CLP regulation.
  - Hazard pictograms

  ![GHS02](image)
  ![GHS07](image)
  - Signal word Danger
  - Hazard-determining components of labelling:
    methyl methacrylate
  - Hazard statements
    H225 Highly flammable liquid and vapour.
    H315 Causes skin irritation.
    H317 May cause an allergic skin reaction.
    H335 May cause respiratory irritation.
  - Precautionary statements
    P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
    P241 Use explosion-proof electrical/ventilating/lighting equipment.
    P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
    P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
    P321 Specific treatment (see on this label).
    P405 Store locked up.

2.3 Other hazards -
- Results of PBT and vPvB assessment
  - PBT: Not applicable.

(Contd. on page 2)
Trade name: Technovit Universal Liquid

- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
  - Description: -
  - Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>CAS: 80-62-6</th>
<th>EINECS: 201-297-1</th>
<th>80-62-6 Reg.nr.: 01-2119452498-28-XXXX</th>
<th>methyl methacrylate</th>
<th>Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335</th>
<th>&gt;90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 3077-12-1</td>
<td>EINECS: 221-359-1</td>
<td>N,N-bis(2-hydroxyethyl)-p-toluidine</td>
<td>Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td>0-5%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - After inhalation: Supply fresh air; consult doctor in case of symptoms.
  - After skin contact: Instantly rinse with water.
    If skin irritation continues, consult a doctor.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult doctor.
  - After swallowing: Rinse out mouth and then drink plenty of water.
    Instantly call for doctor.
    In case of persistent symptoms consult doctor.
    Product based on methacrylates

- 4.2 Most important symptoms and effects, both acute and delayed
  No further relevant information available.

- 4.3 Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents: CO2, sand, extinguishing powder. Do not use water.
  - For safety reasons unsuitable extinguishing agents: Water.

- 5.2 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.

- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.
  - Additional information: -

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.

- 6.2 Environmental precautions: Prevent material from reaching sewage system, holes and cellars.
---

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**
  Keep containers 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.

- **7.2 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 in cool, dry conditions in well sealed containers.
  - **7.3 Specific end use(s)** No further relevant information available.

---

**SECTION 8: Exposure controls/personal protection**

- **8.1 Control parameters**

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

  **80-62-6 methyl methacrylate**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL (Great Britain)</td>
<td></td>
<td>Short-term: 416 mg/m³, 100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term:  208 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>IOELV (European Union)</td>
<td></td>
<td>Short-term:  100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term:  50 ppm</td>
</tr>
</tbody>
</table>

  **DNELs**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>worker industr., l.te., syst.</td>
</tr>
<tr>
<td></td>
<td>74.3 mg/Kg/d (human)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>worker industr., l.te., syst.</td>
</tr>
<tr>
<td></td>
<td>210 mg/m³ (human)</td>
</tr>
</tbody>
</table>

  **PNECs**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>fresh water</td>
</tr>
<tr>
<td></td>
<td>0.94 mg/l (aqua)</td>
</tr>
</tbody>
</table>

  **Additional information:** The lists that were valid during the compilation were used as basis.

---

(Contd. of page 3)
8.2 Exposure controls

- General protective and hygienic measures
  - Personal protective equipment
    - 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.
    - 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 trough 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

SECTION 9: Physical and chemical properties

9.1 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/freezing point: Not determined
  - Initial boiling point and boiling range: 100.3 °C
  - Flash point: 10 °C
  - Inflammability (solid, gaseous) Not applicable.
Ignition temperature: 430 °C

Decomposition temperature: Not determined.

Self-inflammability: Product is not selfigniting.

Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures is possible.

Critical values for explosion:
- Lower: 2.1 Vol %
- Upper: 12.5 Vol %

Steam pressure at 20 °C: 47 hPa

Density at 20 °C: 0.94482 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: Not determined.
- Kinematic: Not determined.

Solvent content:
- Solids content: 2.4 %

9.2 Other information:
No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity:
No further relevant information available.

10.2 Chemical stability:
- Conditions to be avoided: No decomposition if used and stored according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known

10.3 Possibility of hazardous reactions:
No further relevant information available.

10.4 Conditions to avoid:
No hazardous decomposition products:
None
- Additional information:

SECTION 11: Toxicological information

11.1 Information on toxicological effects:
- Acute toxicity: Based on available data, the classification criteria are not met.
- LD/LC50 values that are relevant for classification:

<table>
<thead>
<tr>
<th>80-62-6 methyl methacrylate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3077-12-1 N,N-bis(2-hydroxyethyl)-p-toluidine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
</tbody>
</table>

(Contd. on page 6)
Trade name: Technovit Universal Liquid

**SECTION 12: Ecological information**

- **12.1 Toxicity**
  - **Aquatic toxicity**: No further relevant information available.
- **12.2 Persistence and degradability**
  - No further relevant information available.
- **12.3 Bioaccumulative potential**
  - No further relevant information available.
- **12.4 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.
- **12.5 Results of PBT and vPvB assessment**
  - **PBT**: Not applicable.
  - **vPvB**: Not applicable.
- **12.6 Other adverse effects**
  - No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 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.

**SECTION 14: Transport information**

- **14.1 UN-Number**
  - **ADR, IMDG, IATA**: UN1247
- **14.2 UN proper shipping name**
  - **ADR**: 1 2 4 7 M E T H Y L M E T H A C R Y L A T E MONOMER, STABILIZED mixture
  - **IMDG, IATA**: METHYL METHACRYLATE MONOMER, STABILIZED mixture
## Safety data sheet

**Trade name:** Technovit Universal Liquid

### 14.3 Transport hazard class(es)
- **ADR**
  - Class: 3 (F1) Flammable liquids.
  - Label: 3

- **IMDG, IATA**
  - Class: 3 Flammable liquids.
  - Label: 3

### 14.4 Packing group
- **ADR, IMDG, IATA**
  - II

### 14.5 Environmental hazards:
- Marine pollutant: No

### 14.6 Special precautions for user
- **Kemler Number:** 33
- **EMS Number:** F-E,S-D
- **Stowage Category:** B
- **Stowage Code:** SW2 Clear of living quarters.

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

### Transport/Additional information:
- **ADR**
  - Limited quantities (LQ): 1L Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml
  - Excepted quantities (EQ)
- **IMDG**
  - Limited quantities (LQ): 1L Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml
  - Excepted quantities (EQ)

(Contd. on page 8)
Trade name: Technovit Universal Liquid

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
    - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - Seveso category P5c FLAMMABLE LIQUIDS
  - 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
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 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.
  - 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
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - 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
  - Acute Tox. 4: Acute toxicity – Category 4
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - 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.