

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 16.03.2016

Version: 12

Revision: 16.03.2016

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

- **1.1 Product identifier**
- **Trade name:** *Enamel Plus Temp Liquid: Hot Curing*
- **Article number:** *TEMP25LH\_TEMPLH*
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
*No further relevant information available.*
- **Application of the substance / the mixture** *see point 3)*
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*GDF GmbH, Dieselstrasse 5-6, D-61191 Rosbach v.d.H. (Germany)*  
*Tel.: +49(0)6003/814-100, Fax: +49(0)6003/814-901*  
*www.gdfmbh.com; e-mail: info@gdfmbh.com*
- **Distributor:**  
*Micerium spa., Via G. Marconi, 83 - 16036 Avegno (GE), Italy, Tel.: +39-0185-7887870, Fax: +39-0185-7887970*
- **Further information obtainable from:** *F&E, Tel. +49 (0)6003/814-100*
- **1.4 Emergency telephone number:**  
*+49 (0) 6003 814-100 GDF GmbH (8:00 - 17:00 Uhr) or*  
*+49 (0) 6131 19240 Poison Information Center, University Mainz (24 h)*

**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.*  
*Eye Irrit. 2 H319 Causes serious eye 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 GHS07

- **Signal word** *Danger*
- **Hazard-determining components of labelling:**  
*methyl methacrylate*  
*2-ethylhexyl methacrylate*  
*tetramethylene dimethacrylate*
- **Hazard statements**  
*H225 Highly flammable liquid and vapour.*  
*H315 Causes skin irritation.*  
*H319 Causes serious eye irritation.*  
*H317 May cause an allergic skin reaction.*  
*H335 May cause respiratory irritation.*
- **Precautionary statements**  
*P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*  
*P241 Use explosion-proof electrical/ventilating/lighting/equipment.*  
*P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

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P305+P351+P338 **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Labelling of packages where the contents do not exceed 125 ml**
- **Hazard pictograms**



GHS02 GHS07

- **Signal word** *Danger*

- **Hazard-determining components of labelling:**

methyl methacrylate

2-ethylhexyl methacrylate

tetramethylene dimethacrylate

- **Hazard statements**

H317 May cause an allergic skin reaction.

- **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P321 Specific treatment (see on this label).

P363 Wash contaminated clothing before reuse.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**

- **Description:**

Liquid based on methacryl acid ester, containing an activator, used for the production of temporary crowns and bridges in dental medicine.

- **Dangerous components:**

|                                     |                                                                                                     |         |
|-------------------------------------|-----------------------------------------------------------------------------------------------------|---------|
| CAS: 80-62-6<br>EINECS: 201-297-1   | methyl methacrylate<br>Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335 | 25-50%  |
| CAS: 688-84-6<br>EINECS: 211-708-6  | 2-ethylhexyl methacrylate<br>Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335               | 25-50%  |
| CAS: 2082-81-7<br>EINECS: 218-218-1 | tetramethylene dimethacrylate<br>Skin Sens. 1B, H317                                                | 2,5-10% |

- **Additional information** For the wording of the listed risk phrases refer to section 16.

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**

· **After inhalation** Supply fresh air and to be sure call for a doctor.

· **After skin contact**

Immediately wash with water and soap and rinse thoroughly.

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- 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.  
Do not induce vomiting; call for medical help immediately.
- **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**  
Water spray  
Foam  
Fire-extinguishing powder  
Carbon dioxide
- **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

### **SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Ensure adequate ventilation  
Wear protective clothing.  
Wear protective equipment. Keep unprotected persons away.  
Keep away from ignition sources
- **6.2 Environmental precautions:**  
Prevent seepage into sewage system, workpits and cellars.  
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **6.4 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.

### **SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**  
Keep receptacles tightly sealed.  
Keep away from heat and direct sunlight.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Fumes can combine with air to form an explosive mixture.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Do not store at temperatures over 30 °C.
- **Information about storage in one common storage facility:** Store away from foodstuffs.

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- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

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

- **Additional information about design of technical facilities:** No further data; see item 7.

#### **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

##### **80-62-6 methyl methacrylate**

WEL Short-term value: 416 mg/m<sup>3</sup>, 100 ppmLong-term value: 208 mg/m<sup>3</sup>, 50 ppm

- **Additional information:** The lists valid during the making were used as basis.

#### **8.2 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.

##### **Respiratory protection:**

Not necessary if room is well-ventilated.

Use suitable respiratory protective device when high concentrations are present.

Short term filter device:

Filter A

##### **Protection of hands:** Protective gloves.

##### **Material of gloves** Butyl rubber, BR

##### **Penetration time of glove material**

0,1 - 0,2 mm

Penetration time: 5 min.

##### **Eye protection:** Safety glasses

### **SECTION 9: Physical and chemical properties**

#### **9.1 Information on basic physical and chemical properties**

##### **General Information**

##### **Appearance:**

**Form:** Fluid**Colour:** Colourless**Odour:** Characteristic**Odour threshold:** Not determined.**pH-value:** Not determined.

##### **Change in condition**

**Melting point/Melting range:** undetermined**Boiling point/Boiling range:** 101 °C**Flash point:** 10 °C**Flammability (solid, gaseous)** Not applicable.**Ignition temperature:** 430 °C**Decomposition temperature:** Not determined.**Self-igniting:** Product is not selfigniting.

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|                                                   |                                                                                             |
|---------------------------------------------------|---------------------------------------------------------------------------------------------|
| · <b>Danger of explosion:</b>                     | Product is not explosive. However, formation of explosive air/vapour mixtures are possible. |
| · <b>Explosion limits:</b>                        |                                                                                             |
| <b>Lower:</b>                                     | 2,1 Vol %                                                                                   |
| <b>Upper:</b>                                     | 12,5 Vol %                                                                                  |
| · <b>Vapour pressure at 20 °C:</b>                | 47 hPa                                                                                      |
| · <b>Density:</b>                                 | Not determined                                                                              |
| · <b>Relative density</b>                         | Not determined.                                                                             |
| · <b>Vapour density</b>                           | Not determined.                                                                             |
| · <b>Evaporation rate</b>                         | Not determined.                                                                             |
| · <b>Solubility in / Miscibility with Water:</b>  | Not miscible or difficult to mix                                                            |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.                                                                             |
| · <b>Viscosity:</b>                               |                                                                                             |
| <b>dynamic:</b>                                   | Not determined.                                                                             |
| <b>kinematic:</b>                                 | Not determined.                                                                             |
| · <b>Solvent content:</b>                         |                                                                                             |
| <b>Organic solvents:</b>                          | 0,0 %                                                                                       |
| · <b>9.2 Other information</b>                    | No further relevant information available.                                                  |

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**  
In presence of radical formers (e. g. peroxides), deoxidizing substances, and/or heavy metal ions, polymerization with heat release is possible.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

## 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 relevant for classification:**  
methyl methacrylate    LD-50 oral    >5000 mg/kg rat (lit.)  
                                         LD-50 inhalativ 7093 ppm/4h rat (lit.)  
tetramethylene dimethacrylate    LD-50 oral    > 5000 mg/kg (rat)  
2-Ethylhexyl methacrylate    LD-50 oral    > 16000 mg/kg rat (lit.)
- **Primary irritant effect:**
- **Skin corrosion/irritation**  
Causes skin irritation.
- **Serious eye damage/irritation**  
Causes serious eye irritation.
- **Respiratory or skin sensitisation**  
May cause an allergic skin reaction.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.

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- **STOT-single exposure**  
May cause respiratory irritation.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Type of test** **Effective concentration** **Method** **Assessment**  
Toxicity to fish: LC-50: >79 mg/l OECD 203  
(MMA) NOEC: 40 mg/l ISO 7346  
Time: 96 h EEC84  
Species:  
Oncorhynchus mykiss  
  
Toxicity to Micro- ECO: 100 mg/l starting inhibition  
Organisms Species: of cell growth  
(MMA) Pseudomonas putida
- **12.2 Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Components:**  
methyl methacrylate Biodegradability: 30,7 %  
Time: 28 d  
Method: OECD 301 C  
Valuation: difficult to decompose
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.  
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.
- **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**  
After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste.  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**

|           |                                                            |
|-----------|------------------------------------------------------------|
| 07 01 04* | other organic solvents, washing liquids and mother liquors |
|-----------|------------------------------------------------------------|

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

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### SECTION 14: Transport information

|                                                                                                                         |                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| · 14.1 UN-Number<br>· ADR, IMDG, IATA                                                                                   | UN1247                                                                                                                                                     |
| · 14.2 UN proper shipping name<br>· ADR<br>· IMDG<br>· IATA                                                             | 1247 METHYL METHACRYLATE MONOMER, STABILIZED mixture<br>METHYL METHACRYLATE MONOMER, STABILIZED mixture<br>Methyl methacrylate monomer, stabilized mixture |
| · 14.3 Transport hazard class(es)<br>· ADR                                                                              |                                                                                                                                                            |
|                                        |                                                                                                                                                            |
| · Class<br>· Label                                                                                                      | 3 (F1) Flammable liquids.<br>3                                                                                                                             |
| · IMDG, IATA                                                                                                            |                                                                                                                                                            |
|                                       |                                                                                                                                                            |
| · Class<br>· Label                                                                                                      | 3 Flammable liquids.<br>3                                                                                                                                  |
| · 14.4 Packing group<br>· ADR, IMDG, IATA                                                                               | II                                                                                                                                                         |
| · 14.5 Environmental hazards:<br>· Marine pollutant:                                                                    | No                                                                                                                                                         |
| · 14.6 Special precautions for user<br>· Danger code (Kemler):<br>· EMS Number:<br>· Stowage Category<br>· Stowage Code | Warning: Flammable liquids.<br>339<br>F-E,S-D<br>B<br>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<br>· Limited quantities (LQ)<br>· Excepted quantities (EQ)                                                        | 1L<br>Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml                                      |
| · Transport category<br>· Tunnel restriction code                                                                       | 2<br>D/E                                                                                                                                                   |
| · IMDG<br>· Limited quantities (LQ)<br>· Excepted quantities (EQ)                                                       | 1L<br>Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml                                      |

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GB

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|                          |                                                                |
|--------------------------|----------------------------------------------------------------|
| · UN "Model Regulation": | UN 1247 METHYL METHACRYLATE MONOMER, STABILIZED MIXTURE, 3, II |
|--------------------------|----------------------------------------------------------------|

### 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

· **National regulations**

· **Technical instructions (air):**

| Class | Share in % |
|-------|------------|
| NK    | 25-50      |

- **Waterhazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this 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.

· **Department issuing MSDS:** F&E GDF GmbH

· **Contact:** Dr. U. Krichbaum

· **Abbreviations and acronyms:**

- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- ICAO: International Civil Aviation Organisation
- 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)
- 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, Hazard Category 2
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
- Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
- Skin Sens. 1B: Sensitisation - Skin, Hazard Category 1B
- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

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