

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

Printing date 25.06.2017

Version number 3

Revision: 25.06.2017

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

- **1.1 Product identifier**
 - Trade name: **Technovit 4000 syrup 1**
- **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** Resin for metallographic testing
- **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. 3 H226 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.
 Repr. 2 H361d Suspected of damaging the unborn child.
 STOT RE 1 H372 Causes damage to the hearing organs through prolonged or repeated exposure.

- **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 GHS08

- **Signal word** Danger
- **Hazard-determining components of labelling:**
 methyl methacrylate
 styrene
- **Hazard statements**
 H226 Flammable liquid and vapour.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H317 May cause an allergic skin reaction.
 H361d Suspected of damaging the unborn child.
 H372 Causes damage to the hearing organs through prolonged or repeated exposure.
- **Precautionary statements**
 P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P241 Use explosion-proof electrical/ventilating/lighting/equipment.

(Contd. on page 2)

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

Printing date 25.06.2017

Version number 3

Revision: 25.06.2017

Trade name: Technovit 4000 syrup 1

(Contd. of page 1)

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

- **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:** Product based on methacrylates

· **Dangerous components:**

CAS: 100-42-5 EINECS: 202-851-5	styrene Flam. Liq. 3, H226; Repr. 2, H361d; STOT RE 1, H372; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319	25-50%
CAS: 80-62-6 EINECS: 201-297-1 Reg.nr.: 01-2119452498-28-0000	methyl methacrylate Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	5-10%

- **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**
 - **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 symptoms.
 - **After skin contact** If skin irritation continues, consult a doctor.
 - **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
 - **After swallowing**
Rinse out mouth and then drink plenty of water.
In case of persistent symptoms consult doctor.
- **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:** Put on breathing apparatus.

(Contd. on page 3)

GB

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

Printing date 25.06.2017

Version number 3

Revision: 25.06.2017

Trade name: Technovit 4000 syrup 1

· **Additional information -**

(Contd. of page 2)

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:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
Send for recovery or disposal in suitable containers.
- **6.4 Reference to other sections**
See Section 13 for information on disposal.
See Section 8 for information on personal protection equipment.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep containers tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
 - **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:** No special requirements.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:** Store cool (not above 25 °C).
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

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

· **8.1 Control parameters**

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

100-42-5 styrene

MEL ()	Short-term value: 1080 mg/m ³ , 250 ppm
	Long-term value: 430 mg/m ³ , 100 ppm

80-62-6 methyl methacrylate

OES ()	Short-term value: 416 mg/m ³ , 100 ppm
	Long-term value: 208 mg/m ³ , 50 ppm

· **DNELs**

80-62-6 methyl methacrylate

Dermal	worker industr., l.te., syst.	74.3 mg/Kg/d (human)
Inhalative	worker industr., l.te., syst.	210 mg/m ³ (human)

· **PNECs**

80-62-6 methyl methacrylate

freshwater	0.94 mg/l (aqua)
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· **Additional information:** The lists that were valid during the compilation were used as basis.

(Contd. on page 4)

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

Printing date 25.06.2017

Version number 3

Revision: 25.06.2017

Trade name: Technovit 4000 syrup 1

(Contd. of page 3)

· 8.2 Exposure controls

· Personal protective equipment

· General protective and hygienic measures

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.
 Do not inhale gases / fumes / aerosols.
 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:

If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.

Solvent resistant gloves

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

· 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
- Fluorocarbon rubber (Viton)
- Nitrile rubber, NBR
- Chloroprene rubber, CR

· Eye protection: Protective goggles are recommended.

· 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:** Yellow
- Smell:** Characteristic
- Odour threshold:** Not determined.

· pH-value: Not determined.

· Change in condition

- Melting point/Melting range:** Not determined
- Boiling point/Boiling range:** > 100 °C

· Flash point: 27 °C

· Inflammability (solid, gaseous) Not applicable.

(Contd. on page 5)

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

Printing date 25.06.2017

Version number 3

Revision: 25.06.2017

Trade name: Technovit 4000 syrup 1

(Contd. of page 4)

· Ignition temperature:	430 °C
· Decomposition temperature:	Not determined.
· Self-inflammability:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
· Critical values for explosion:	
· Lower:	1.2 Vol %
· Upper:	12.5 Vol %
· Steam pressure at 20 °C:	47 hPa
· Density at 20 °C	1.100 g/cm ³
· 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.
· 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.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** None
 - **Additional information:**
If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

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:**

100-42-5 styrene

Oral	LD50	5000 mg/kg (rat)
Inhalative	LC50/4 h	24 mg/l (rat)

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)

(Contd. on page 6)

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

Printing date 25.06.2017

Version number 3

Revision: 25.06.2017

Trade name: Technovit 4000 syrup 1

(Contd. of page 5)

- **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 (carcinogenicity, mutagenicity and toxicity for reproduction)**
Repr. 2
 - **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**
Suspected of damaging the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**
Causes damage to the hearing organs through prolonged or repeated exposure.
- **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.
- **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.
- **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.
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.
- **European waste catalogue**

11 01 98	other wastes containing dangerous substances
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- **Uncleaned packagings:**
 - **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
 - **ADR, IMDG, IATA** 1866

(Contd. on page 7)

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



Printing date 25.06.2017

Version number 3

Revision: 25.06.2017

Trade name: Technovit 4000 syrup 1

(Contd. of page 6)

<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	<p>1866 RESIN SOLUTION, special provision 640E RESIN SOLUTION</p>
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	
	
<ul style="list-style-type: none"> · Class · Label 	<p>3 (F1) Flammable liquids. 3</p>
<ul style="list-style-type: none"> · IMDG, IATA 	
	
<ul style="list-style-type: none"> · Class · Label 	<p>3 Flammable liquids. 3</p>
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	<p>III</p>
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	<p>No</p>
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: 	<p>Warning: Flammable liquids. 30 F-E, S-E</p>
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	<p>-</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>UN1866, RESIN SOLUTION, special provision 640E, 3, III</p>

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - **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.
 - H226 Flammable liquid and vapour.
 - H315 Causes skin irritation.

(Contd. on page 8)

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

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Version number 3

Revision: 25.06.2017

Trade name: Technovit 4000 syrup 1

(Contd. of page 7)

- H317 *May cause an allergic skin reaction.*
- H319 *Causes serious eye irritation.*
- H332 *Harmful if inhaled.*
- H335 *May cause respiratory irritation.*
- H361d *Suspected of damaging the unborn child.*
- H372 *Causes damage to the hearing organs through prolonged or repeated exposure.*

· 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*
- Flam. Liq. 3: *Flammable liquids – Category 3*
- 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*
- Repr. 2: *Reproductive toxicity – Category 2*
- STOT SE 3: *Specific target organ toxicity (single exposure) – Category 3*
- STOT RE 1: *Specific target organ toxicity (repeated exposure) – Category 1*

- *** Data compared to the previous version altered.**

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