



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

Printing date 02/10/2018

Reviewed on 02/10/2018

## 1 Identification

· **Product identifier**

· **Trade name:** **Signum 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](mailto: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**

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

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

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

· **Label elements**

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**

propylidynetrimethanol, ethoxylated, esters with acrylic acid  
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

· **Hazard statements**

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

Suspected of damaging fertility or the unborn child.

· **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapors/spray

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

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

Store locked up.

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



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

HEALTH	2	Health = 2
FIRE	1	Fire = 1
REACTIVITY	0	Reactivity = 0

- **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:**

28961-43-5	propylidynetrimethanol, ethoxylated, esters with acrylic acid Eye Irrit. 2A, H319; Skin Sens. 1, H317	10-25%
2082-81-7	tetramethylene dimethacrylate Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	10-25%
75980-60-8	diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide Repr. 2, H361; Skin Sens. 1B, H317	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**
  - **After inhalation** Supply fresh air; consult doctor in case of complaints.
  - **After skin contact** Immediately rinse with water.
  - **After eye contact**  
Rinse opened eye for several minutes under running water. If symptoms persist, 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**  
No further relevant information available.
  - **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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- Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**  
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** Not required.
- **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).
- **Reference to other sections**  
No dangerous substances are released.  
See Section 8 for information on personal protection equipment.
- 

### 7 Handling and storage

- **Handling**
  - **Precautions for safe handling** Keep receptacles tightly sealed.
  - **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
  - **Storage**
    - **Requirements to be met by storerooms and receptacles:** No special requirements.
    - **Information about storage in one common storage facility:** Not required.
    - **Further information about storage conditions:** Keep cool, if possible (not above 25 °C).
- **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 product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
    - **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
  - **Personal protective equipment**
    - **General protective and hygienic measures**  
Avoid contact with the eyes.  
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:**  
Check protective gloves prior to each use for their proper condition.

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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 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:** Protective goggles are recommended.
- **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:** Ester-like
- **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:** 136 °C (276.8 °F)

· **Flammability (solid, gaseous)** Not applicable.

· **Ignition temperature:** 265.0 °C (509 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

#### · Explosion limits:

- **Lower:** Not determined.
- **Upper:** Not determined.

· **Vapor pressure at 20 °C (68 °F):** 40 hPa (30 mm Hg)

· **Density at 20 °C (68 °F):** 0.850 g/cm<sup>3</sup> (7.09325 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.

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- **Viscosity:**
  - **dynamic:** Not determined.
  - **kinematic:** Not determined.

· **Solvent content:**

- **Solids content:** 10.8 %
- **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:**

**2530-85-0 3-trimethoxysilylpropyl methacrylate**

Oral LD50 >2000 mg/kg (rat)

Dermal LD50 >2000 mg/kg (can)

**2082-81-7 tetramethylene dimethacrylate**

Oral LD50 10120 mg/kg (rat)

**53879-55-3 penta erythritol, propoxylated, tetraacrylate**

Oral LD50 >2000 mg/kg (rat)

**41137-60-4 diurethandimethacrylate**

Oral LD50 >5000 mg/kg (rat)

**amorphe Kieselsäure**

Oral LD50 >5000 mg/kg (rat)

**75980-60-8 diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide**

Oral LD50 > 5000 mg/kg (rat)

- **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Irritant

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· **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>		
128-37-0	2,6-di-tert-butyl-p-cresol	3
· <b>NTP (National Toxicology Program)</b>		
None of the ingredients is listed.		
· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
None of the ingredients is listed.		

**12 Ecological information**

· **Toxicity**

· <b>Aquatic toxicity:</b>	
<b>75980-60-8 diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</b>	
EC50/48h	10 100 mg/l (algae) 10 - 100 mg/l (daphnia)

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

**14 Transport information**

· <b>UN-Number</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	Void
· <b>UN proper shipping name</b>	
· <b>DOT, ADN, IMDG, IATA</b>	Void
· <b>ADR</b>	Void

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· <b>Transport hazard class(es)</b>	
· DOT, ADR, ADN, IMDG, IATA	
· Class	Void
· <b>Packing group</b>	
· DOT, ADR, IMDG, IATA	Void
· <b>Environmental hazards:</b>	
· Marine pollutant:	No
· <b>Special precautions for user</b>	Not applicable.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	-
· <b>UN "Model Regulation":</b>	Void

**15 Regulatory information**

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

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

· **Carcinogenicity categories**

· <b>TLV (Threshold Limit Value established by ACGIH)</b>
128-37-0   2,6-di-tert-butyl-p-cresol   A4

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**

propylidynetrimethanol, ethoxylated, esters with acrylic acid  
diphenyl(2,4,6- trimethylbenzoyl)phosphine oxide

· **Hazard statements**

Causes skin irritation.  
Causes serious eye irritation.  
May cause an allergic skin reaction.  
Suspected of damaging fertility or the unborn child.

· **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapors/spray  
Wear protective gloves/protective clothing/eye protection/face protection.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Specific treatment (see on this label).  
Wash contaminated clothing before reuse.  
Store locked up.

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· **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**

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H361 Suspected of damaging fertility or the unborn child.

· **Date of preparation / last revision** 02/10/2018 / 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

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)

VOCV: Lenkungsabgabe auf flüchtigen organischen Verbindungen, Schweiz (Swiss Ordinance on volatile organic compounds)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

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

Repr. 2: Reproductive toxicity – Category 2

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

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