

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

Printing date 06.12.2012

Revision: 06.12.2012

1 Identification of the substance/mixture and of the company/undertaking· **Product identifier**

- **Trade name: Signum Composite flow**
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation** Veneering resin

· **Details of the supplier of the safety data sheet**· **Manufacturer/Supplier:**

Heraeus Kulzer GmbH
Grüner Weg 11, D-63450 Hanau

Tel.: 0800 4372522

· **Informing department:**

Dr. Klaus Ruppert
Tel.: +49 6081 959-210
Fax: +49 6081 959-223
email: klaus.ruppert@heraeus.com

· **Emergency telephone number:**

Call "Poisoning Emergency Center Berlin": +49 30 30686 790 (24 hours, support in english and german language)

2 Hazards identification· **Classification of the substance or mixture**· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xi; Irritant

R36: Irritating to eyes.

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· **Classification system:**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

· **Label elements**· **Labelling according to EU guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

· **Code letter and hazard designation of product:**

Xi Irritant

· **Risk phrases:**

36 Irritating to eyes.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

37/39 Wear suitable gloves and eye/face protection.

· **Other hazards**· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

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Trade name: **Signum Composite flow**

· vPvB: Not applicable.

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3 Composition/information on ingredients· **Chemical characterization: Mixtures**· **Description:** -· **Dangerous components:**

CAS: 24448-20-2 EINECS: 246-263-7	2-Propenoic acid, 2-methyl-, 1,1'-[(1-methylethylidene)bis(4,1-phenyleneoxy-2,1-ethanediyl)]ester Xi R36/38	10-25%
CAS: 24650-42-8 EINECS: 246-386-6	2,2-Dimethoxy-1,2-diphenyl-ethan-1-ol N R50/53	0-5%
	Butyl-hydroxy-toluol N R50/53	< 1%

4 First aid measures· **Description of first aid measures**· **General information** No special measures required.· **After inhalation**Supply fresh air; consult doctor in case of symptoms.
Seek medical treatment in case of complaints.· **After skin contact**Instantly 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 doctor.

· **After swallowing**Rinse out mouth and then drink plenty of water.
In case of persistent symptoms 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 Firefighting measures· **Extinguishing media**· **Suitable extinguishing agents**CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.· **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**

Wear protective clothing.

· **Environmental precautions:**

Do not allow to enter drainage system, surface or ground water.

Do not allow to enter the ground/soil.

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- **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.
- **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 information on disposal.

7 Handling and storage

- **Handling**
 - **Precautions for safe handling** Wear protective equipment. Keep unprotected persons away.
 - **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 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).
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Control parameters**
 - **Components with critical 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 compilation were used as basis.
- **Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
 Avoid contact with the eyes and skin.
 Keep away from foodstuffs, beverages and food.
 Wash hands during breaks and at the end of the work.
 - **Breathing equipment:**
 Use breathing protection against the effects of fumes/dust/aerosol.
 Filter A/P2.
 - **Protection of hands:**
 - **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.
 - **For the permanent contact gloves made of the following materials are suitable:**
 Natural rubber, NR
 - **Eye protection:** Safety glasses
 - **Body protection:** Light weight protective clothing

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9 Physical and chemical properties· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**· **Form:**

Fluid

· **Colour:**

Cream coloured

· **Smell:**

Recognizable

· **Odour threshold:**

Not determined.

· **pH-value:**

Not determined.

· **Change in condition**· **Melting point/Melting range:**

Not determined

· **Boiling point/Boiling range:**

255 °C

· **Flash point:**

>100 °C

· **Inflammability (solid, gaseous)**

Not applicable.

· **Ignition temperature:**· **Decomposition temperature:**

Not determined.

· **Self-inflammability:**

Product is not selfigniting.

· **Danger of explosion:**

Product is not explosive.

· **Critical values for explosion:**· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Steam pressure:**

Not determined.

· **Density**

Not determined

· **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.

· **Other information**

No further relevant information available.

10 Stability and reactivity· **Reactivity**· **Chemical stability**· **Conditions to be avoided:** No decomposition if used and stored according to specifications.· **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:** -

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11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

24650-42-8 2,2-Dimethoxy-1,2-diphenyl-ethan-1-on

Oral	LD50	>2000 mg/kg (rat)
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- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** Irritant effect.

- **Sensitization:** No sensitizing effect known.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behaviour in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

- Harmful to aquatic organisms

- Avoid transfer into the environment.

- **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**

- Small quantities can be polymerized by light 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**

- **ADR, ADN, IMDG, IATA** Void

- **UN proper shipping name**

- **ADR, ADN, IMDG, IATA** Void

- **Transport hazard class(es)**

- **ADR, ADN, IMDG, IATA**
 - **Class** Void

- **Packing group**

- **ADR, IMDG, IATA** Void

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- | | |
|--|-----------------|
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | - |

15 Regulatory information

- **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**
 - R36/38 Irritating to eyes and skin.
 - R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Contact:**
 - Dr. Thiele Tel.: (+49) 6181 35-3012
 - email: ruediger.thiele@heraeus.com
- * **Data compared to the previous version altered.**

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according to 1907/2006/EC, Article 31

Printing date 21.01.2013

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1 Identification of the substance/mixture and of the company/undertaking**· Product identifier****· Trade name: Signum opaque F****· Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· Application of the substance / the preparation Auxiliary for manufacture of dental prothesis**· Details of the supplier of the safety data sheet****· Manufacturer/Supplier:**

Heraeus Kulzer GmbH

Grüner Weg 11, D-63450 Hanau

Tel.: 0800 4372522

· Informing department:

Dr. Klaus Ruppert

Tel.: +49 6081 959-210

Fax: +49 6081 959-223

email: klaus.ruppert@heraeus.com

· Emergency telephone number:

Call "Poisoning Emergency Center Berlin": +49 30 30686 790 (24 hours, support in english and german language)

2 Hazards identification**· Classification of the substance or mixture****· Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xi; Irritant

R36: Irritating to eyes.

Xi; Sensitising

R43: May cause sensitisation by skin contact.

· Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· Classification system:

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

· Label elements**· Labelling according to EU guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

· Code letter and hazard designation of product:

Xi Irritant

· Hazard-determining components of labelling:Bisphenol A Diglycidylether Diacrylat (BADGE-DA)
methacrylic acid, monoester with propane-1,2-**· Risk phrases:**

36 Irritating to eyes.

43 May cause sensitisation by skin contact.

· Safety phrases:

23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

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24/25 Avoid contact with skin and eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

28 After contact with skin, wash immediately with plenty of water.

37/39 Wear suitable gloves and eye/face protection.

60 This material and its container must be disposed of as hazardous waste.

- **Special labelling of certain preparations:**

Contains Bisphenol A Diglycidylether Diacrylat (BADGE-DA), methacrylic acid, monoester with propane-1,2-. May produce an allergic reaction.

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Product based on methacrylates

- **Dangerous components:**

CAS: 28961-43-5	Triacrylat eines oxyethylierten Trimethylpropans	Xi R36	10-25%
CAS: 27813-02-1 EINECS: 248-666-3	methacrylic acid, monoester with propane-1,2-	Xi R36; Xi R43	5-10%
CAS: 10373-78-1 EINECS: 233-814-1	2,3-Bornandion	Xi R36/38	0-5%

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

4 First aid measures

- **Description of first aid measures**

- **After skin contact** The product is not skin irritating.

- **After eye contact**

Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

- **After swallowing** Initiate vomiting and consult a 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 Firefighting measures

- **Extinguishing media**

- **Suitable extinguishing agents**

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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** -

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Prevent material from reaching sewage system, holes 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 materials are released.
See Section 8 for information on personal protection equipment.

7 Handling and storage

- **Handling**
 - **Precautions for safe handling** Keep containers 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 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).
- **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 critical 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.

· **DNELs****4687-94-9 Bis-Glycidylacrylat**

Dermal	worker, l.te., syst.	17.5 mg/Kg/d (nd)
Inhalative	worker, l.te., syst.	122.5 mg/m3 (nd)

· **PNECs****4687-94-9 Bis-Glycidylacrylat**

STP	10 mg/l (nd)
freshwater	0.1 mg/l (nd)
interm. wat. release	1.0 mg/l (nd)
marine water	0.01 mg/l (nd)
sedim., dw, fre.wat.	35.8 mg/Kg (nd)
soil,dw	71 mg/Kg (nd)

- **Additional information:** The lists that were valid during the compilation 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 food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
 - **Breathing equipment:** Not required.

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- **Protection of hands:**

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 in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Natural rubber, NR
PVC or PE gloves

- **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:** Pasty
- **Colour:** According to product specification
- **Smell:** Ester-like

- **Change in condition**

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

- **Flash point:** 101 °C

- **Self-inflammability:** Product is not selfigniting.

- **Danger of explosion:** Product is not explosive.

- **Steam pressure at 20 °C:** 40 mbar

- **Density at 20 °C** 1.360 g/cm³

- **Solubility in / Miscibility with**

- **Water:** Not miscible or difficult to mix

- **Solvent content:**

- **Solids content:** 26.8 %

- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity**

- **Chemical stability**

- **Conditions to be avoided:** No decomposition if used and stored according to specifications.

- **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

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· **Additional information:**

If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

4687-94-9 Bis-Glycidylacrylat

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)

109-16-0 triethylenglycoldimethacrylate

Oral	LD50	10837 mg/kg (rat)
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27813-02-1 methacrylic acid, monoester with propane-1,2-

Oral	LD50	> 5000 mg/kg (rat)
Dermal	LD50	> 5000 mg/kg (rab)

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Irritant effect.

· **Sensitization:** Sensitizing effect by skin contact is possible by prolonged exposure.

· **Additional toxicological information:**

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

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

· **Behaviour 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 undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

· **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 by light 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.

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· **European waste catalogue**

18 01 06 chemicals consisting of or containing dangerous substances

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**

· ADR, ADN, IMDG, IATA

Void

· **UN proper shipping name**

· ADR, ADN, IMDG, IATA

Void

· **Transport hazard class(es)**

· ADR, ADN, IMDG, IATA

· Class

Void

· **Packing group**

· ADR, IMDG, IATA

Void

· **Environmental hazards:**

· **Marine pollutant:**

No

· **Special precautions for user**

Not applicable.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

-

15 Regulatory information

· **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**

R36 Irritating to eyes.

R36/38 Irritating to eyes and skin.

R43 May cause sensitisation by skin contact.

· **Contact:**

Dr. Thiele Tel.: (+49) 6181 35-3012

email: ruediger.thiele@heraeus.com

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

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

· **Product identifier**

· **Trade name: Signum matrix ...**

· - opal schneide, opal transparent, mamelon-dentin, sekundär-dentin

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

· **Application of the substance / the preparation** Veneering resin

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Heraeus Kulzer GmbH

Grüner Weg 11, D-63450 Hanau

Tel.: 0800 4372522

· **Informing department:**

Dr. Klaus Ruppert

Tel.: +49 6081 959-210

Fax: +49 6081 959-223

email: klaus.ruppert@heraeus.com

· **Emergency telephone number:**

Call "Poisoning Emergency Center Berlin": +49 30 30686 790 (24 hours, support in english and german language)

2 Hazards identification

· **Classification of the substance or mixture**

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** void

· **Information concerning particular hazards for human and environment:** void

· **Classification system:**

Toxicologic tests have proven that the material is not hazardous.

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

· **Label elements**

· **Labelling according to EU guidelines:**

Observe the normal safety regulations when handling chemicals

The product is not subject to classification according to the calculation methods of the "General Classification Guideline for Preparations of the EC" as issued in the last version.

The product is not subject to identification regulations under EC Directives and the Ordinance on Hazardous Materials (GefStoffV).

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Product based on methacrylates

· **Dangerous components:**

CAS: 24448-20-2	2-Propenoic acid,2-methyl-, 1,1'-[(1-methylethylidene)bis(4,1-	25-50%
EINECS: 246-263-7	phenyleneoxy-2,1-ethanediyl)]ester	
	Xi R36/38	

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

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Trade name: **Signum matrix ...**

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4 First aid measures

- **Description of first aid measures**
 - **General information** No special measures required.
 - **After skin contact** The product is not skin irritating.
 - **After eye contact** Rinse opened eye for several minutes under running water.
 - **After swallowing** Initiate vomiting and consult a 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 Firefighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam. Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **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:** No special measures required.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
- **Reference to other sections**
See Section 13 for information on disposal.
See Section 8 for information on personal protection equipment.
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7 Handling and storage

- **Handling**
 - **Precautions for safe handling** No special measures required.
 - **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 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).
- **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.

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Trade name: **Signum matrix ...**

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- **Control parameters**
 - **Components with critical 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 compilation were used as basis.
- **Exposure controls**
 - **Personal protective equipment**
 - **General protective and hygienic measures**
The usual precautionary measures should be adhered to in handling the chemicals.
 - **Breathing equipment:** Not required.
 - **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
 - **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.
 - **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 in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**
Butyl rubber, BR
Nitrile rubber, NBR
 - **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:** not absolutely necessary
 - **Body protection:** Light weight protective clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
 - **General Information**
 - **Appearance:**
 - **Form:** Fluid
 - **Colour:** Different according to colour
 - **Smell:** Odourless
 - **Change in condition**
 - **Melting point/Melting range:** Not determined
 - **Boiling point/Boiling range:** >200 °C
 - **Flash point:** >100 °C
 - **Self-inflammability:** Product is not selfigniting.
 - **Danger of explosion:** Product is not explosive.
 - **Density at 20 °C** 0 g/cm³
 - **Solubility in / Miscibility with**
 - **Water:** Not miscible or difficult to mix

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Trade name: Signum matrix ...

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- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity**
 - **Chemical stability**
 - **Conditions to be avoided:** No decomposition if used and stored according to specifications.
- **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:**
If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**
 - **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** No irritant effect.
 - **Sensitization:** No sensitizing effect known.
 - **Additional toxicological information:**
The product is not subject to classification according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version.
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12 Ecological information

- **Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour 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 bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.
- **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**
Small quantities can be polymerized by light 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.

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Trade name: **Signum matrix ...**

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· **European waste catalogue**

18 01 06 chemicals consisting of or containing dangerous substances

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**

· ADR, ADN, IMDG, IATA

Void

· **UN proper shipping name**

· ADR, ADN, IMDG, IATA

Void

· **Transport hazard class(es)**

· ADR, ADN, IMDG, IATA

· Class

Void

· **Packing group**

· ADR, IMDG, IATA

Void

· **Environmental hazards:**

· **Marine pollutant:**

No

· **Special precautions for user**

Not applicable.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

-

15 Regulatory information

· **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**

R36/38 Irritating to eyes and skin.

· **Contact:**

Dr. Thiele Tel.: (+49) 6181 35-3012

email: ruediger.thiele@heraeus.com

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

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1 Identification of the substance/mixture and of the company/undertaking· **Product identifier**· **Trade name: Signum liquid**· **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· **Application of the substance / the preparation** Auxiliary for manufacture of dental prothesis· **Details of the supplier of the safety data sheet**· **Manufacturer/Supplier:**

Heraeus Kulzer GmbH

Grüner Weg 11, D-63450 Hanau

Tel.: 0800 4372522

· **Informing department:**

Dr. Klaus Ruppert

Tel.: +49 6081 959-210

Fax: +49 6081 959-223

email: klaus.ruppert@heraeus.com

· **Emergency telephone number:**

Call "Poisoning Emergency Center Berlin": +49 30 30686 790 (24 hours, support in english and german language)

2 Hazards identification· **Classification of the substance or mixture**· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xi; Irritant

R36: Irritating to eyes.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· **Classification system:**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

· **Label elements**· **Labelling according to EU guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

· **Code letter and hazard designation of product:**

Xi Irritant

· **Risk phrases:**

36 Irritating to eyes.

· **Safety phrases:**

25 Avoid contact with eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

28 After contact with skin, wash immediately with plenty of water.

36/37 Wear suitable protective clothing and gloves.

· **Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.

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Trade name: Signum liquid· **vPvB:** Not applicable.

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3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Product based on methacrylates

· **Dangerous components:**

CAS: 28961-43-5	Triacrylat eines oxyethylierten Trimethylpropans	Xi R36	10-25%
CAS: 75980-60-8	Diphenyl(2,4,6-trimethylbenzoyl)phosphinoxid	Xn R62	0-5%
EINECS: 278-355-8		R52/53	

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

4 First aid measures

- **Description of first aid measures**
 - **After skin contact** Instantly rinse with water.
 - **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
 - **After swallowing** Initiate vomiting and consult a 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 Firefighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam. 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 material from reaching sewage system, holes 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 materials are released.
See Section 8 for information on personal protection equipment.
-

7 Handling and storage

- **Handling**
 - **Precautions for safe handling** Keep containers tightly sealed.

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Trade name: Signum liquid

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- **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 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).
- **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 critical 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 compilation 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 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 required.
 - **Protection of hands:** Not required.
 - **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.
 - **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 in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**
Natural rubber, NR
 - **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
 - **Colour:** Colourless
 - **Smell:** Ester-like
 - **Change in condition**
 - **Melting point/Melting range:** Not determined
 - **Boiling point/Boiling range:** 100 °C
 - **Flash point:** 136 °C
 - **Ignition temperature:** 265.0 °C

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Trade name: **Signum liquid**

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· Self-inflammability:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive.
· Steam pressure at 20 °C:	40 hPa
· Density at 20 °C	0.850 g/cm ³
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix
· Solvent content:	
· Solids content:	10.8 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
 - **Chemical stability**
 - **Conditions to be avoided:** No decomposition if used and stored according to specifications.
- **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:**
If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**
 - **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** Irritant effect.
 - **Sensitization:** No sensitizing effect known.
 - **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
Irritant

12 Ecological information

- **Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour 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 bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.
- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

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Trade name: **Signum liquid**

· **Other adverse effects** No further relevant information available.

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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 by light 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**

18 01 06	chemicals consisting of or containing dangerous substances
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· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information· **UN-Number**

· ADR, ADN, IMDG, IATA

Void

· **UN proper shipping name**

· ADR, ADN, IMDG, IATA

Void

· **Transport hazard class(es)**

· ADR, ADN, IMDG, IATA

· Class

Void

· **Packing group**

· ADR, IMDG, IATA

Void

· **Environmental hazards:**· **Marine pollutant:**

No

· **Special precautions for user**

Not applicable.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

-

15 Regulatory information

· **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**

R36 Irritating to eyes.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R62 Possible risk of impaired fertility.

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Trade name: Signum liquid

(Contd. of page 5)

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