

# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 10.11.2021



Version number 4

Revision: 10.11.2021

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

- **1.1 Product identifier**
- **Trade name: SHERAprint-model plus UV**
- **Article number:**  
sand: SD400383  
grey: SD400382
- **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:** 3D printing material
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
SHERA Werkstoff-Technologie GmbH & Co. KG  
Espohlstraße 53  
D-49448 Lemförde  
GERMANY  
sdb@shera.de  
+ 49 (0) 54 43 . 99 33 . 0
- **Further information obtainable from:** Department of product security.
- **1.4 Emergency telephone number:**  
Giftinformationszentrum-Nord: +49 (0) 551-19240  
(Information in german or english)

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008:**  
Eye Irrit. 2            H319 Causes serious eye irritation.  
Skin Sens. 1            H317 May cause an allergic skin reaction.  
Repr. 1A                H360D May damage the unborn child.  
Aquatic Chronic 3    H412 Harmful to aquatic life with long lasting effects.
- **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:**  
   
GHS07    GHS08
- **Signal word:** Danger
- **Hazard-determining components of labelling:**  
Aliphatisches Urethanacrylat  
tetrahydrofurfuryl methacrylate  
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate  
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide  
Phosphine oxide
- **Hazard statements:**  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.  
H360D May damage the unborn child.  
H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements:**  
P201 Obtain special instructions before use.

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- P261 Avoid breathing dust / fume / gas / mist / vapours / spray.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
 P302+P352 IF ON SKIN: Wash with plenty of water.  
 P308+P313 IF exposed or concerned: Get medical advice/attention.  
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P337+P313 If eye irritation persists: Get medical advice/attention.  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 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 Mixtures**
- **Description:** Acrylic/methacrylate resins with additives.

- **Dangerous components:**

	acrylated resin Eye Irrit. 2, H319	10-40%
EC number: 906-649-5 Reg.nr.: 01-2120266262-	Aliphatisches Urethanacrylat Aquatic Chronic 2, H411; Skin Sens. 1B, H317	1-15%
CAS: 2455-24-5	Tetrahydrofurfuryl methacrylate Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	1-15%
CAS: 42978-66-5 EINECS: 256-032-2 Index number: 607-249-00-X Reg.nr.: 01-2119484613-34	(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 Specific concentration limit: STOT SE 3; H335: C ≥ 10 %	1-10%
CAS: 162881-26-7 ELINCS: 423-340-5 Index number: 015-189-00-5 Reg.nr.: 01-2119489401-38	phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide Skin Sens. 1A, H317; Aquatic Chronic 4, H413	0.1-5%
CAS: 75980-60-8 EINECS: 278-355-8 Index number: 015-203-00-X Reg.nr.: 01-2119972295-29	Phosphine oxide Repr. 2, H361f; Aquatic Chronic 2, H411; Skin Sens. 1, H317	0.1-3%

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

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:**  
Supply fresh air and to be sure call for a doctor.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**  
Clean with water and soap. If possible, also wash with polyethylene glycol 400.  
In case of skin irritation, seek medical treatment.  
Remove dirty clothing and wash before using again.
- **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.

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- 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:** Use fire extinguishing methods suitable to surrounding conditions.
- **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.  
Wear fully protective suit.
- **Additional information**  
Collect contaminated fire fighting water separately. It must not enter the sewage system.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Ensure adequate ventilation.  
Use respiratory protective device against the effects of fumes / dust / aerosol.  
Wear protective clothing.  
Avoid contact with skin and eyes.
- **6.2 Environmental precautions** 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.
- **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**  
Ensure good ventilation / exhaustion at the workplace.  
Prevent formation of aerosols.  
Devices with local extraction are to be used for open handling.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**  
Store only in the original receptacle.  
Keep container in a well-ventilated, cool and dry place.  
Store only in the tightly closed original container at room temperature.
- **Information about storage in one common storage facility:**  
Do not store together with oxidising and acidic materials.  
Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Protect from heat and direct sunlight.

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- Do not store in a protective gas environment, as oxygen (in the air) is required for stabilisation.
- **Storage class:** No information available.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

#### • 8.1 Control parameters

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

42978-66-5 (1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
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MAK (Germany) cf. Section IV
------------------------------

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

#### • 8.2 Exposure controls

- **Appropriate engineering controls** No further data; see item 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

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.

Pregnant women should strictly avoid inhalation or skin contact.

#### • **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

#### • **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product. Due to missing tests no recommendation to the glove material can be given for the product. 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.

#### • **Eye/face protection**



Tightly sealed goggles

- **Body protection:** Protective work clothing.

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#### SECTION 9: Physical and chemical properties

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

###### · General Information

· Colour:	Different, depending on coloring
· Odour:	Ester-like
· Melting point/freezing point:	Undetermined.
· Boiling point or initial boiling point and boiling range	Undetermined.
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	>100 °C (DIN 51755)
· Auto-ignition temperature:	Product is not selfigniting.
· Decomposition temperature:	≥190 °C
· pH	Not determined.
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Not miscible or difficult to mix.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	<1 hPa
· Density and/or relative density	
· Density at 20 °C:	1.09 g/cm <sup>3</sup> (DIN 51757)
· Relative density	Not determined.
· Vapour density	Not determined.

##### · 9.2 Other information

· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· Organic solvents:	0.0 %
· VOC (EC):	0.00 %
· Solids content:	Not determined.
· Change in condition:	
· Evaporation rate	Not determined.

##### · Information with regard to physical hazard classes

· Explosives	Void.
· Flammable gases	Void.
· Aerosols	Void.
· Oxidising gases	Void.
· Gases under pressure	Void.
· Flammable liquids	Void.
· Flammable solids	Void.
· Self-reactive substances and mixtures	Void.
· Pyrophoric liquids	Void.
· Pyrophoric solids	Void.
· Self-heating substances and mixtures	Void.

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- |  |       |
|--|-------|
| • <b>Substances and mixtures, which emit flammable gases in contact with water</b> | Void. |
| • <b>Oxidising liquids</b>   | Void. |
| • <b>Oxidising solids</b>  | Void. |
| • <b>Organic peroxides</b>   | Void. |
| • <b>Corrosive to metals</b>   | Void. |
| • <b>Desensitised explosives</b>   | Void. |

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No data available.
- **10.2 Chemical stability** No decomposition if used according to specifications.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with acids, alkalis and oxidising agents.
- **10.4 Conditions to avoid**  
The product cures when exposed to visible and UV light. It must therefore be stored in closed containers, in complete darkness and at 15°C - 28°C.
- **10.5 Incompatible materials** No further relevant information available.
- **10.6 Hazardous decomposition products**  
If the product is exposed to fire, it can release caustic acrylate vapours.

### SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity:** Based on available data, the classification criteria are not met.

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

**acrylated resin**

Oral	LD50	>2,000 mg/kg (Rabbit)
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Dermal	LD50	>2,000 mg/kg (Rat)
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**42978-66-5 (1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate**

Oral	LD50	6,200 mg/kg (Rat)
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Dermal	LD50	>2,000 mg/kg (Rabbit)
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**162881-26-7 phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**

Oral	LD50	>2,000 mg/kg (Rat) (OECD 402)
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**75980-60-8 Phosphine oxide**

Oral	LD50	>5,000 mg/kg (Rat)
------	------	--------------------

Dermal	LD50	>2,000 mg/kg (Rat)
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- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**  
Causes serious eye irritation.
- **Respiratory or skin sensitisation**  
May cause an allergic skin reaction.
- **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**  
May damage the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **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.

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**11.2 Information on other hazards**
**Endocrine disrupting properties**

None of the ingredients is listed.

### SECTION 12: Ecological information

**12.1 Toxicity**
**Aquatic toxicity:**
**2455-24-5 Tetrahydrofurfuryl methacrylate**

LC50/96 h 34.7 mg/l (Fish)

**42978-66-5 (1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate**

LC50/96 h 4.5-10 mg/l (Leuciscus idus (golden orfe))

EC50/48 h 88.7 mg/l (Daphnia (Daphnia magna))

EC50/72 h &gt;28 mg/l (Algae)

**162881-26-7 phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide**

LC50/96 h &gt;0.09 mg/l (Fish)

EC50/48 h &gt;1.175 mg/l (Daphnia (Daphnia magna))

NOEC &gt;0.008 mg/l (Daphnia (Daphnia magna))

**75980-60-8 Phosphine oxide**

EC50/48 h 3.53 mg/l (Daphnia (Daphnia magna))

EC10 1.56 my (Algae)

EC50/72 h &gt;2.01 mg/l (Algae)

LC50/48 h 6.53 mg/l (Fish)

**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.

**12.5 Results of PBT and vPvB assessment**
**PBT:** Not applicable.

**vPvB:** Not applicable.

**12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

**12.7 Other adverse effects**
**Remark:** Harmful to fish.

**Additional ecological information:**
**General notes:**

Harmful to aquatic organisms.

Water hazard class 3 (German Regulation) (Self-assessment): extremely 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.

### SECTION 13: Disposal considerations

**13.1 Waste treatment methods**
**Recommendation:**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

**Waste disposal key:**

The waste disposal code as prescribed in the European Waste Catalogue (EWC) depends on the waste producer and can thus vary for a product. The waste disposal code should thus be obtained separately from the waste producer in each case.

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

#### SECTION 14: Transport information

- |   |                 |
|---|-----------------|
| · <b>14.1 UN number or ID number</b>                                  |                 |
| · <b>ADR, IMDG, IATA</b>  | Void.           |
| · <b>ADN</b>  | Void.           |
| · <b>14.2 UN proper shipping name</b>                                 |                 |
| · <b>ADR, IMDG, IATA</b>  | Void.           |
| · <b>14.3 Transport hazard class(es)</b>                              |                 |
| · <b>ADR, IMDG, IATA</b>  |                 |
| · <b>Class</b>  | Void.           |
| · <b>ADN/R Class:</b>   | Void.           |
| · <b>14.4 Packing group</b>   |                 |
| · <b>ADR, IMDG, IATA</b>  | Void.           |
| · <b>14.5 Environmental hazards:</b>                                  | Not applicable. |
| · <b>14.6 Special precautions for user</b>                            | Not applicable. |
| · <b>14.7 Maritime transport in bulk according to IMO instruments</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>                                       | Void.           |

#### 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.
- **National regulations:**
- **Information about limitation of use:**
  - Employment restrictions concerning juveniles must be observed.
  - Employment restrictions concerning pregnant and lactating women must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

#### SECTION 16: Other information

This information is based on the state of knowledge and experience pertaining on the date of issue. The information is not to be taken as a guarantee of product properties and do not constitute the basis for a contractual legal relationship. The details must not be changed or transferred to other products. Duplication in an unchanged state is permissible.

- **Relevant phrases**
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H319 Causes serious eye irritation.
  - H335 May cause respiratory irritation.
  - H361f Suspected of damaging fertility.
  - H411 Toxic to aquatic life with long lasting effects.

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H413 May cause long lasting harmful effects to aquatic life.

· **Department issuing SDS:** Department of product security.

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

Skin Sens. 1A: Skin sensitisation . Category 1A

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

Repr. 1A: Reproductive toxicity . Category 1A

Repr. 2: Reproductive toxicity . Category 2

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

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard . Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard . Category 3

Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard . Category 4

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

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