

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.11.2021


Version number 3

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
- **Article number:**
sand: SD400083
grey: SD400082
- **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.
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
- **Signal word:** Warning
- **Hazard-determining components of labelling:**
Aliphatisches Urethanacrylat
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
tetrahydrofurfuryl methacrylate
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide
Ethyl-2-cyan-3 (4-hydroxy-3-methoxy-phenyl) acrylat
Phosphine oxide
- **Hazard statements:**
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements:**
P261 Avoid breathing dust / fume / gas / mist / vapours / spray.
P280 Wear protective gloves / eye protection.

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- P302+P352 IF ON SKIN: Wash with plenty of water.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 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:**

CAS: 2143103-44-8 EC number: 944-336-4 Reg.nr.: 01-2120266262-60	Aliphatisches Urethanacrylat Skin Sens. 1B, H317; Aquatic Chronic 3, H412	40-<45%
	acrylated resin Eye Irrit. 2, H319	15-<20%
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 %	5-<10%
CAS: 2455-24-5	tetrahydrofurfuryl methacrylate Repr. 2, H361; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	1-<5%
CAS: 13373-29-0	Ethyl-2-cyan-3 (4-hydroxy-3-methoxy-phenyl) acrylat Skin Sens. 1, H317	<1%
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	1-<5%
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	<1%

- **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.
Remove dirty clothing and wash before using again.
Seek medical treatment.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

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- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** 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**
In case of fire, cool endangered receptacles with water spray.
Do not allow water used to extinguish fire to enter drains or waterways.
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Avoid contact with skin and eyes.
Use respiratory protective device against the effects of fumes / dust / aerosol.
Wear protective equipment. Keep unprotected persons away.
- **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).
Dispose contaminated material as waste according to item 13.
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 / exhaust at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Keep container tightly closed.
- **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:**
Store only in the original container.
Protect from heat and direct sunlight.

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Store in the dark.

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

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.

Store protective clothing separately.

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.

Use suitable respiratory protective device in case of insufficient ventilation.

• 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

Safety glasses.



Tightly sealed goggles

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

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: | Practically insoluble. |
| • 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 ³ (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: | |
| • VOC (EC): | 0.00 % |
| • 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. |

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- | | |
|---|-------|
| • Self-heating substances and mixtures | Void. |
| • Substances and mixtures, which emit flammable gases in contact with water | Void. |
| • Oxidising liquids | Void. |
| • Oxidising solids | Void. |
| • Organic peroxides | Void. |
| • Corrosive to metals | Void. |
| • Desensitised explosives | Void. |

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No data available.
- **10.2 Chemical stability** Stable under normal storage and handling conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with strong acids and alkali.
Reacts with 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** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity:**
No toxicological data available for the product. An LD50 (oral, rat) of >5000 mg/kg was found for products with a similar composition.

• LD/LC50 values relevant for classification:

2143103-44-8 Aliphatisches Urethanacrylat

Oral	LD50	>5,000 mg/kg (Rat) (OECD 401)
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acrylated resin

Oral	LD50	>2,000 mg/kg (Rabbit)
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Dermal	LD50	>2,000 mg/kg (Rat)
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2455-24-5 tetrahydrofurfuryl methacrylate

Oral	LD50	4,000 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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75980-60-8 Phosphine oxide

Oral	LD50	>5,000 mg/kg (Rat)
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Dermal	LD50	>2,000 mg/kg (Rat)
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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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- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye irritation.

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- **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** Based on available data, the classification criteria are not met.
- **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.
- **11.2 Information on other hazards**

- **Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

2143103-44-8 Aliphatisches Urethanacrylat

EC50/48 h 15.9 mg/l (Daphnia (Daphnia magna)) (OECD 202)

LC50/96 h 18 mg/l (Fish) (OECD 203)

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 >28 mg/l (Algae)

75980-60-8 Phosphine oxide

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

EC10 1.56 mg/l (Algae)

EC50/72 h >2.01 mg/l (Algae)

LC50/48 h 6.53 mg/l (Fish)

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

LC50/96 h >0.09 mg/l (Fish)

EC50/48 h >1.175 mg/l (Daphnia (Daphnia magna))

NOEC >0.008 mg/l (Daphnia (Daphnia magna))

- **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

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Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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.

• Uncleaned packaging:

• Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

• 14.1 UN number or ID number

• ADR, IMDG, IATA

Void.

• ADN

Void.

• 14.2 UN proper shipping name

• ADR, IMDG, IATA

Void.

• 14.3 Transport hazard class(es)

• ADR, IMDG, IATA

• Class

Void.

• ADN/R Class:

Void.

• 14.4 Packing group

• ADR, IMDG, IATA

Void.

• 14.5 Environmental hazards:

Not applicable.

• 14.6 Special precautions for user

Not applicable.

• 14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

• UN "Model Regulation":

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.

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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.
- H361 Suspected of damaging fertility or the unborn child.
- H361f Suspected of damaging fertility.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.
- 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. 2: Reproductive toxicity . Category 2
 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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