

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 18.12.2024

Version number 1

Revision: 18.12.2024


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

- **1.1 Product identifier**
- **Trade name: SHERAprint-model 2.0**
- **Article number: SD400430**
- **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
Espohlstraße 53
D-49448 Lemförde
GERMANY
sdb@shera.de
+ 49 (0) 54 43 - 9933 - 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:**

Skin Irrit. 2	H315 Causes skin irritation.
Eye Irrit. 2	H319 Causes serious eye irritation.
Skin Sens. 1	H317 May cause an allergic skin reaction.
STOT SE 3	H335 May cause respiratory irritation.
Aquatic Chronic 2	H411 Toxic 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 GB CLP regulation.
- **Hazard pictograms:**



GHS07



GHS09
- **Signal word:** Warning
- **Hazard-determining components of labelling:**
Urethane acrylate
(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate
Aliphatic diacrylates
ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide
TMDI-HPMA adduct
- **Hazard statements:**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.
- **Precautionary statements:**
P261 Avoid breathing mist/vapours/spray.
P273 Avoid release to the environment.

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- P280 Wear protective gloves / eye protection.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 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:** Mixture of acrylic resins and initiators.

- **Dangerous components:**

	Urethane acrylate Aquatic Chronic 2, H411; Eye Irrit. 2, H319; Skin Sens. 1, H317	10-60%
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 %	5-40%
	Aliphatic diacrylates Aquatic Chronic 2, H411; Skin Sens. 1B, H317	10-40%
	Polyurethanharz Eye Irrit. 2, H319	10-60%
CAS: 84434-11-7 EINECS: 282-810-6 Reg.nr.: 01-2119987994-10	ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate Aquatic Chronic 2, H411; Skin Sens. 1B, H317	0.1-2.5%
	TMDI-HPMA adduct Aquatic Chronic 2, H411; Skin Sens. 1, H317	0.1-2.5%
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	0.1-2.5%

- **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:**

In case of skin irritation, seek medical treatment.

Remove dirty clothing and wash before using again.

Immediately wash with water and soap and rinse thoroughly.

- **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.

- **4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

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- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fire with alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon dioxide (CO₂).
Carbon monoxide (CO).
Pyrolysis products, toxic.
- **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.
Dilute with plenty of 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**
Devices with local extraction are to be used for open handling.
Ensure good ventilation / exhaustion at the workplace.
Prevent formation of aerosols.
- **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.
Keep away from light.
Might polymerize with high heat release.
Storage temperature between 4 and 28°C.

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- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Do not store in a protective gas environment, as oxygen (in the air) is required for stabilisation.
Keep container tightly sealed.
- **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 section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
Ensure good ventilation / exhaustion at the workplace.
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.
- **Respiratory protection:**
Not necessary if room is well-ventilated.
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:**

Nitrile rubber, NBR

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** Goggles recommended during refilling
- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Physical state**

Fluid

- **Colour:**

Various colours

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· Odour:	characteristic
· 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:	Not applicable.
· Decomposition temperature:	Not determined.
· pH	Not determined.
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic at 20 °C:	600-1,000 mPas
· Solubility	
· water:	Insoluble.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure:	Not determined.
· Density and/or relative density	
· Density:	Not determined.
· 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.	
· Ignition temperature:	Product is not selfigniting.
· 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.
· 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.

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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 hardens under the influence of visible and UV light. Therefore, keep them in closed containers at 4 ° C -28 ° C with complete exclusion of light.
- **10.5 Incompatible materials**
Oxidizing agents.
Reducing agents.
Acids.
Alkalis (alkalis).
Metal.
- **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:**

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

Oral	LD50	6,200 mg/kg (Rat)
Dermal	LD50	>2,000 mg/kg (Rabbit)

Aliphatic diacrylates

Oral	LD50	>2,000 mg/kg (Rat)
Dermal	LD50	>2,000 mg/kg (Rabbit)

84434-11-7 ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

Oral	LD50	>5,000 mg/kg (Rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (Rat)

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** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** May cause an allergic skin reaction.
- **STOT-single exposure** May cause respiratory irritation.

- **11.2 Information on other hazards**

- **Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

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)

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Aliphatic diacrylates

EC50/48h 2.36 mg/l (Daphnia (Daphnia magna)) (OECD 202)

EC50/72 h 1.6 mg/l (Algae) (OECD 201)

LC50/72 h 1.65 mg/l (Fish) (OECD 203)

84434-11-7 ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

LC50/96 h 1.89 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:** Toxic for fish.
- **Additional ecological information:**
- **General notes:**
Also poisonous for fish and plankton in water bodies.
Water hazard class 2 (German Regulation) (Self-assessment): 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:**
Smaller quantities could be cured with light and can be disposed of as household waste. Larger quantities shall be disposed of as special waste in accordance with local regulations.
- **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

- | | |
|--|--|
| <ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA | <p>UN3082</p> |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR | <p>3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Urethane acrylate, (1-methyl-1,2-ethanediy)bis[oxy(methyl-2,1-ethanediy)] diacrylate)</p> |

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<ul style="list-style-type: none"> · IMDG · IATA 	<p>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Urethane acrylate, (1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate), MARINE POLLUTANT</p> <p>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Urethane acrylate, (1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate)</p>
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, IMDG, IATA 	<p>9 Miscellaneous dangerous substances and articles. 9</p>
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	<p>III</p>
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR): · Special marking (IATA): 	<p>Symbol (fish and tree)</p> <p>Symbol (fish and tree)</p> <p>Symbol (fish and tree)</p>
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category 	<p>Warning: Miscellaneous dangerous substances and articles.</p> <p>90</p> <p>F-A,S-F</p> <p>A</p>
<ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: · ADR · Limited quantities (LQ): · Excepted quantities (EQ): · Transport category: · Tunnel restriction code: · Remarks: 	<p>5L</p> <p>Code: E1</p> <p>Maximum net quantity per inner packaging: 30 ml</p> <p>Maximum net quantity per outer packaging: 1000 ml</p> <p>3</p> <p>(-)</p> <p>SV 375: These substances, when carried in single or combination packagings of a net quantity not exceeding 5 litres of liquids or a net mass not exceeding 5 kg of solids per single or combination packaging, are not subject to the other provisions of ADR, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.</p> <p>> 5 l: 9</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ): · Excepted quantities (EQ): 	<p>5L</p> <p>Code: E1</p> <p>Maximum net quantity per inner packaging: 30 ml</p> <p>Maximum net quantity per outer packaging: 1000 ml</p>

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· **IATA**· **Remarks:**

A 197: These substances are not subject to other provisions of these Regulations when carried in single or combination packagings with a net quantity per single or inner packaging not exceeding 5L for liquids and a net weight not exceeding 5kg for substances, provided the packagings meet the general requirements of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

> 5 l: Class 9

· **UN "Model Regulation":**

UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (URETHANE ACRYLATE, (1-METHYL-1,2-ETHANEDIYL)BIS[OXY(METHYL-2,1-ETHANEDIYL)] DIACRYLATE), 9, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**

· **Regulated explosives precursors**

None of the ingredients is listed.

· **Regulated poisons**

None of the ingredients is listed.

· **Reportable explosives precursors**

None of the ingredients is listed.

· **Reportable poisons**

None of the ingredients is listed.

· **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.

- **Seveso category E2** Hazardous to the Aquatic Environment

- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t

- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t

· **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.

H411 Toxic to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

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· **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

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 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4

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

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