Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Engineering Resin Extreme Strength

Version number: SDS 1.0 Date of compilation: 2021-10-12

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

1.1 Product identifier

Trade name	**Engineering Resin Extreme Strength**
Registration number (REACH)	not relevant (mixture)
Unique formula identifier (UFI)	H300-V0PW-D002-G03X

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	3D printing resin

1.3 Details of the supplier of the safety data sheet

MAYER MAKES e.U.
Josef Kollmann Strasse 25
2500 Baden
Telephone: +43 6 50 248-280 4
e-mail: clemens.mayer@mayermakes.at

e-mail (competent person)	clemens.mayer@mayermakes.at

1.4 Emergency telephone number

Emergency information service	+43 6 50 248-280 4 This number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.3	serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.4S	skin sensitisation	1	Skin Sens. 1	H317

For full text of abbreviations: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- Signal word warning
- Pictograms

GHS07

- Hazard statements

H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

- Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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.

- Hazardous ingredients for labelling: Methacrylic acid, monoester with propane-1,2-diol, 2,2'-ethylenedioxydiethyl dimethacrylate, phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide, mequinol

2.3 Other hazards

of no significance

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier		Wt%	Classification acc. to GHS
Methacrylic acid, monoester with propane-1,2-diol	CAS No	27813-02-1	25 – < 50	Acute Tox. 4 / H302 Eye Irrit. 2 / H319 Skin Sens. 1 / H317
2,2'-ethylenedioxydiethyl dimethacrylate	CAS No	109-16-0	5 – < 10	Skin Sens. 1B / H317
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	CAS No	162881-26-7	1 – < 5	Skin Sens. 1 / H317 Aquatic Acute 1 / H400 Aquatic Chronic 4 / H413
mequinol	CAS No	150-76-5	< 1	Acute Tox. 4 / H302 Eye Irrit. 2 / H319 Skin Sens. 1 / H317
triphenyl phosphite	CAS No	101-02-0	< 1	Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410

Name of substance	Specific Conc. Limits	M-Factors	ATE	Exposure route
Methacrylic acid, monoester with propane-1,2-diol	-	-	≥2,000 $^{mg}/_{kg}$	oral
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	-	M-factor (acute) = 10.0	-	
mequinol	-	-	500 $^{mg}/_{kg}$	oral
triphenyl phosphite	Skin Irrit. 2; H315: C ≥ 5 % Eye Irrit. 2; H319: C ≥ 5 %	-	-	

For full text of abbreviations: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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7.2 Conditions for safe storage, including any incompatibilities

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

This information is not available.

Relevant DNELs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	DNEL	14.7 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	DNEL	4.2 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	DNEL	48.5 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	DNEL	13.9 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
mequinol	150-76-5	DNEL	3 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	PNEC	0.904 mg/l	aquatic organisms	freshwater	short-term (single instance)
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	PNEC	0.904 mg/l	aquatic organisms	marine water	short-term (single instance)
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	PNEC	6.28 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	PNEC	6.28 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	PNEC	0.727 mg/kg	terrestrial organisms	soil	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.016 mg/l	aquatic organisms	freshwater	short-term (single instance)

Relevant PNECs of components of the mixture						
Name of substance	**CAS No**	**Endpoint**	**Threshold level**	**Organism**	**Environmental compartment**	**Exposure time**
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.002 $^{mg}/_{l}$	aquatic organisms	marine water	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	1.7 $^{mg}/_{l}$	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.185 $^{mg}/_{kg}$	aquatic organisms	freshwater sediment	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.018 $^{mg}/_{kg}$	aquatic organisms	marine sediment	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.027 $^{mg}/_{kg}$	terrestrial organisms	soil	short-term (single instance)
mequinol	150-76-5	PNEC	0.014 $^{mg}/_{l}$	aquatic organisms	freshwater	short-term (single instance)
mequinol	150-76-5	PNEC	0.001 $^{mg}/_{l}$	aquatic organisms	marine water	short-term (single instance)
mequinol	150-76-5	PNEC	10 $^{mg}/_{l}$	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
mequinol	150-76-5	PNEC	0.125 $^{mg}/_{kg}$	aquatic organisms	freshwater sediment	short-term (single instance)
mequinol	150-76-5	PNEC	0.013 $^{mg}/_{kg}$	aquatic organisms	marine sediment	short-term (single instance)
mequinol	150-76-5	PNEC	0.017 $^{mg}/_{kg}$	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Type of material

Nitrile

- Material thickness

≥0,35mm

- Breakthrough times of the glove material

>60 minutes (permeation: level 3)

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	>168 °C at 101.3 kPa
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	not determined
Flash point	not determined
Auto-ignition temperature	255 °C (auto-ignition temperature (liquids and gases))
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined
Solubility(ies)	not determined
Partition coefficient	
Partition coefficient n-octanol/water (log value)	this information is not available
Vapour pressure	0.11 hPa at 20 °C
Density and/or relative density	
Density	1.15 $^{g}/_{cm^3}$ at 20 °C
Relative vapour density	information on this property is not available
Particle characteristics	not relevant (liquid)

9.2 Other information

Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics

Temperature class (EU, acc. to ATEX) T3 (maximum permissible surface temperature on the equipment: 200°C)

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

UV-radiation/sunlight.

10.5 Incompatible materials

Oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	oral	≥2,000 $^{mg}/_{kg}$
mequinol	150-76-5	oral	500 $^{mg}/_{kg}$

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1	**UN number or ID number**	not subject to transport regulations
14.2	**UN proper shipping name**	not relevant
14.3	**Transport hazard class(es)**	none
14.4	**Packing group**	not assigned
14.5	**Environmental hazards**	non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)			
Name of substance	**Name acc. to inventory**	**CAS No**	**No**
Engineering Resin Extreme Strength	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		3
2,2'-ethylenedioxydiethyl dimethacrylate	substances in tattoo inks and permanent make-up		75
Methacrylic acid, monoester with propane-1,2-diol	substances in tattoo inks and permanent make-up		75
mequinol	substances in tattoo inks and permanent make-up		75

Dangerous substances with restrictions (REACH, Annex XVII)			
Name of substance	**Name acc. to inventory**	**CAS No**	**No**
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	substances in tattoo inks and permanent make-up		75

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

none of the ingredients are listed

Seveso Directive

2012/18/EU (Seveso III)			
No	**Dangerous substance/hazard categories**	**Qualifying quantity (tonnes) for the application of lower and upper-tier requirements**	**Notes**
	not assigned		

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

none of the ingredients are listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

none of the ingredients are listed

Water Framework Directive (WFD)

List of pollutants (WFD)			
Name of substance	**CAS No**	**Listed in**	**Remarks**
triphenyl phosphite		A)	
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide		A)	

Legend
A) Indicative list of the main pollutants

Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

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Engineering Resin Extreme Strength

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
M-factor	Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitisation
SVHC	Substance of Very High Concern
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

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