

Safety Data Sheet

SECTION 1: Product and Manufacturer Identification

1.1. Product Identification

Trade name: Filament PMMA 1.75mm
Filament PMMA 2.85mm
Filament PMMA 3.00mm

1.2. Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant identified uses of the substance or mixture

Use: Thermal processing in 3D printing.

1.3. Details of the Supplier of the Safety Data Sheet

Manufacturer: Devil Design Ryszka Mateja Sp. J.
ul. Żwirki i Wigury 65
43-190 Mikołów, Poland
tax identification number: NIP 6351837318
e-mail: office@devildesign.com

SECTION 2: Hazards Identification

2.1. Classification of the Substance or Mixture

Classification according to the CLP regulation (Regulation (UE) No. 1272/2008)

Not classified as a hazardous substance or mixture.

2.2. Label Elements

No product labelling is required.

2.3. . Other Hazards

Swallowing hazard. Inhalation of gases and vapours generated during processing can irritate the respiratory system. Gases and vapours generated during processing can irritate the skin and eyes. Contact with hot product can cause skin burns.

SECTION 3: Composition and Information on Ingredients

3.2. Mixtures

Chemical description

Composition:	Methyl methacrylate, ethyl acrylate, dye
Chemical name:	Polymethyl methacrylate
Common name:	PMMA
Type of plastic:	Thermoplastic

Chemical Name	EU Number	CAS Number	Content [%]	Classification [EU No. 1272/2008]
Methyl methacrylate	201-297-1	80-62-6	< 1	Highly flammable liquid cat 2: H225; Skin irritation cat 2: H315; Skin sensitisation cat 1: H317, Toxic effect on the affected organs – single exposure, cat 3: H335
Ethyl acrylate	205-438-8	140-88-5	< 0,3	Highly flammable liquid cat 2: H225; Acute toxicity (4; indigestion): H302; Acute toxicity (3; inhalation): H331; Acute toxicity (4; skin): H312; Skin irritation cat2: H315; Eye irritation cat2: H319; Skin sensitisation cat 1: H317; Toxic effect on the affected organs – single exposure, cat 3: H335; Aquatic environment hazard – continued hazard cat 3: H412.
Bis(2,2,6,6 tetramethyl 4 piperidyl) sebacate	258-207-9	52829-07-9	< 0,3	Sever eye damage cat 1: H318; Aquatic environment hazard cat 1: H400; Aquatic environment hazard – continued hazard cat 2: H411; M-Factor Acute = 1

The data are based on the properties of (an) ingredient(s) of the mixture. Depending on the dye used, they can vary slightly.

SECTION 4: First Aid Measures

4.1. Description of First Aid Measures

General:	No special precautions are needed.
Skin contact:	In case of contact with molten product, wash the place of contact immediately with plenty of cold water for at least 15 minutes. Consult a doctor.
Eye contact:	Rinse the eyes thoroughly with plenty of water for at least 15 minutes. Consult a doctor.
Aspiration:	Seek fresh air. Consult a doctor immediately.
Ingestion:	If swallowed, do not induce vomiting. Consult a doctor immediately.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed

None are known.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed.

In case of any alarming symptom or accident, consult a doctor immediately.

SECTION 5: Firefighting Measures

5.1. Extinguishing Media

Suitable extinguishing media:

Water spray
Carbon dioxide (CO₂)
Dry extinguishing powder

For safety reasons unsuitable extinguishing agents:

Strong concentrated water jet

5.2. Special Hazards Arising From the Substance or Mixture

Hazardous combustion products:

Methacrylates
Acrylates
Styrene
Hydrogen cyanide (hydrocyanic acid)
Acrylonitrile

Aldehydes
Carbon oxide (CO)
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)
Sulphur dioxide
Hydrocarbons
Nitrogen
Toxic gases/vapours
Organic substances

The data are based on the properties of (an) ingredient(s) of the mixture. Depending on the dye used, they can vary slightly.

5.3. Advice for Firefighters

Personal protective equipment for firefighters:

Self-contained breathing apparatus
Protective overalls

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

6.1.1. For Persons Other Than Emergency Personnel

Protective equipment:

When exposed to gases and vapours, use personal breathing protection.
Use personal protective equipment (See: SECTION 8).

Emergency procedures:

Remove the source of ignition. Avoid contact with the skin and eyes. Do not inhale gases and vapours.

6.1.2. For Emergency Personnel

When exposed to gases and vapours, use personal breathing protection.
Use personal protective equipment (see: SECTION 8).

6.2. Environmental Precautions

Do not allow the product to reach any sewage system or surface and ground waters.

6.3. Methods and Material for Containment and Cleaning Up

Remove mechanically.

6.4. Reference to Other Sections

Personal protective equipment – see SECTION 8.
Waste handling – see SECTION 13.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling

Handling of the substance or preparation:

The product should be processed in a well ventilated environment. Where required, an air extractor should additionally be used.

General work hygiene rules:

Do not eat or drink when handling the product, do not smoke in the working area. After contact with the product, wash the hands and face. Avoid exposure to emitted vapours and gases. Do not inhale emitted vapours and gases.

Instructions for protection against fire and explosion

Conditions and measures should be ensured to prevent accumulation of electrostatic charge. Keep away from ignition sources.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical measures and storage conditions:

Store the product away from ignition sources; in a dry, shady place, at room temperature. Due to quality reasons, protect against moisture, dust and dirt.

Storage together with other substances/preparations:

Do not store near strong oxidisers.

7.3. Specific End Use(s)

No specific recommendations have been made.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control Parameters

Methyl methacrylate			
Source	Type	Value [ppm]	Value [mg/m3]
EH40 WEL	TWA	50	208

EH40 WEL	STEL	100	416
EU ELV	STEL	100	-
EU ELV	TWA	50	-
Ethyl acrylate			
Source	Type	Value [ppm]	Value [mg/m3]
EH40 WEL	STEL	15	42
EH40 WEL	TWA	5	21
EU ELV	TWA	5	21
EU ELV	STEL	10	42

DNEL values: No data.

PNEC values: No data.

The values are based on the known properties of (an) ingredient(s) of the mixture.

8.2. Exposure Controls

General protection rules: The product should be processed in a well ventilated room; where required, an air extractor should additionally be used. Where ventilation is insufficient, use respiratory protective equipment (pursuant to Regulation (EU) 2016/425).

Eye and face protection: Wear glasses, protective goggles or visor.

Hand protection: Where exposed to hot product, wear protective gloves.

Respiratory protection: When exposed to dusts, use respiratory protective equipment.

SECTION 9: Physical and Chemical Properties

9.1. Information on Basic Physical and Chemical Properties

State: Solid

Appearance: Cable/wire

Colour: Transparent and, depending on the dye used, red

Odour: Acrylic

Odour threshold: No data

pH value: Not applicable

Melting point: > 84°C

Bolting point: No data

Evaporation date: Not applicable

Flammability:	No data
Upper/lower flammability limits:	No data
Vapour pressure:	Not determined
Vapour density:	Not determined
Density:	1.140 kg/m ³
Solubility in water:	Insoluble at 20°C
Solubility in other liquids:	No data
n-octanol/water partition coefficient:	Bis(2,2,6,6 tetramethyl 4 piperidyl) sebacate; log Kow: 0.35 (at 25°C)
Spontaneous ignition temperature:	ok. 430°C
Thermal decomposition:	> 280°C
Viscosity:	No data
Explosive properties:	Not applicable
Oxidising properties:	Not applicable
Combustion properties:	Not applicable

Depending on the colour of the product, its physical and chemical properties can vary slightly.

9.2. Other Information

Solubility in solvents: Soluble in chlorinated solvents, aromatic solvents, aldehydes, ketones and esters

SECTION 10: Stability and Reactivity

10.1. Reactivity

No data. See: SECTION 10.3.

10.2. Chemical Stability

Stable under recommended conditions of storage. See SECTION 7.2.

10.3. Possibility of Hazardous Reactions

No hazardous reactions under recommended storage conditions are known.

10.4. Conditions to Avoid

Avoid accumulation of dust, heat and ignition sources, sparks, electrostatic discharges, product handling in poorly ventilated rooms and temperatures exceeding the thermal decomposition point of the masterbatch.

10.5. Incompatible Materials

Strong oxidisers, reducing and alkalising agents.

10.6. Hazardous Decomposition Products

Combustion produces methacrylates, acrylates and carbon oxides.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute toxicity: LD50 >2.000 mg/kg (rat)

The product has not been tested. The specified value is based on the known properties of (an) ingredient(s) of the mixture.

Skin irritation: Can irritate the skin.

Eye irritation: Can irritate the eyes.

Sensitisation: No sensitising effect has been demonstrated.

Mutagenicity: Does not contain any mutagenic ingredients.

SECTION 12: Ecological Information

Ecotoxicological assessment: Harmful to aquatic organisms

12.1. Toxicity

Acute toxicity: bis(2,2,6,6 tetramethyl 4 piperidyl) sebacate		
-	Value	Method
Fish	LC50, 96h: 4.4mg/l (bluefin salmon)	OECD Test Guideline 203
Aquatic invertebrates	EC50, 48h: 8.58mg/l (daphnia magna)	OECD Test Guideline 202
Water plants	ErC50, 72h: = 0.705mg/l (green algae)	OECD Test Guideline 201
Microorganisms	IC50, 3h: > 100mg/l activated sludge)	OECD Test Guideline 209
Long-term toxicity: bis(2,2,6,6 tetramethyl 4 piperidyl) sebacate		
-	Value	Method
Aquatic invertebrates	NOEC, 21d: = 0.23mg/l	OECD Test Guideline 211
Water plants	ErC10, 72h: = 0.188mg/l (green algae)	OECD Test Guideline 201

The product has not been tested. The specified value is based on the known properties of (an) ingredient(s) of the mixture.

12.2. Persistence and Degradability

The products is non-readily biodegradable.

Bis(2,2,6,6 tetramethyl 4 piperidyl) sebacate: 24% after 28 days (OECD Test Guideline 301 B)

The product has not been tested. The specified value is based on the known properties of (an) ingredient(s) of the mixture.

12.3. Bioaccumulative Potential

No bioaccumulative potential can be identified or no data.

Bis(2,2,6,6 tetramethyl 4 piperidyl) sebacate: n-octanol/water partition coefficient (log Kow): 0.35 at 25°C (OECD Test Guideline 107).

The product has not been tested. The specified value is based on the known properties of (an) ingredient(s) of the mixture.

12.4. Mobility in Soil

Bis(2,2,6,6 tetramethyl 4 piperidyl) sebacate (log Koc): 2.89-4.2 (OECD Test Guideline 106)

The product has not been tested. The specified value is based on the known properties of (an) ingredient(s) of the mixture.

12.5. Results of PBT and vPvB Assessment

Analysis of the individual ingredients has shown that the product is neither a PBT nor a vPvB, the mixture does not contain any substances classified as a PBT or a vPvB or no chemical safety report (CSR) is required.

12.6. Other Adverse Effects

See: SECTION 6.2.

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

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Product: Filament PMMA 1.75mm; 2.85mm; 3.00mm

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Last revision date: --/--/----

Product: Do not release waste into sewage systems. Waste should be neutralised in accordance with applicable local laws, Regulations (EU) 91/15/CEE, 91/689/CEE, 94/62/CEE and the relevant amendments.

Packaging: Neutralise in accordance with applicable local laws.

SECTION 14: Transport Information

SECTION 14.1. to 14.5.

IMDG:	Not applicable/Unrestricted
IATA:	Not applicable/Unrestricted
RID:	Not applicable/Unrestricted
ADN:	Not applicable/Unrestricted
ADR:	Not applicable/Unrestricted

14.6. Special Precautions for Users

See: SECTIONS 6, 7 and 8.

14.7. Transport in Bulk According to Annex II of Marpol 73/78 and the IBC Code

No data.

SECTION 15: Regulatory Information

15.1. Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

Devil Design Ryszka Mateja Sp. J. has used its best efforts to ensure that the information contained in this document is accurate and reflects, according to its best knowledge, the actual status. At the same time, Devil Design Ryszka Mateja Sp. J. disclaims any responsibility for the use thereof. The product has not been tested, and all the information contained in this document is based on the data of (an) ingredient(s) of the mixture. Depending on the specific features of the product, in particular its colour, its physical and chemical properties can vary; the data sheet indicates known extremes. Each and every user is obliged to use the product in accordance with applicable local laws.

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The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 1996, the Statutory Instruments 192/1996, the Hazardous Waste Regulations 2005 and the Control of Substances Hazardous to Health Regulations 2002 are applicable in the European Union.

15.2. Chemical Safety Assessment

For the substances or ingredients described above, no chemical safety assessment (CSA) was available prior to the last revision date.

SECTION 16: Other Information

Compiled by: Devil Design Ryszka Mateja Sp. J.

Last revision date: --/--/----

