

# Material Safety Data Sheet

## SECTION 1: Product and Company Identification

### 1.1. Product identification

**Commercial reference:** TPU Filament 1.75mm  
TPU Filament 2.85mm  
TPU Filament 3.00mm

### 1.2. Product application

**Application:** Thermal processing in 3D printing process.

### 1.3. Details of the producer

**Producer:** Devil Design Ryszka Mateja Sp. J.  
ul. Górna 31  
43-195 Mikołów, Poland  
NIP: 6351837318  
Tel.: +48 727 624 216  
e-mail: office@devildesign.pl

### 1.4. Emergency telephone number

**Telephone No.:** (+48) 727 624 216 (Monday – Friday from 9:00 to 15:00 [GMT + 01:00])

## SECTION 2: Hazard Identification

### 2.1. Classification of the product

**Classification according to the Regulation No. 1999/45)**

The product has not been classified as a harmful substance.

The data have been cited based on mixture component(s) properties.

### 2.2. Labelling elements

**Labelling:** according to the European Directive 1999/45/EC and the Annex VI to the European Directive 67/548/EEC the substance does not require any specific labelling.

The data have been cited based on mixture component(s) properties.

### 2.3. Other risk

There is ingestion risk. The inhalation of fumes and gases released during substance processing causes pulmonary oedema. Gas and fumes generated during processing may cause irritation of skin and eyes.

## SECTION 3: Composition and Information on Components

### 3.2. Mixtures

<b>Composition:</b>	Thermoplastic polyurethane elastomer, colorant
<b>Chemical name:</b>	Thermoplastic polyurethane elastomer
<b>Common name:</b>	TPU
<b>Kind of material:</b>	Thermoplastic material

## SECTION 4: First Aid Measures

### 4.1. Description of first aid measures

**General information:** Use appropriate personal protective equipment at the workplace and provide good ventilation while working with the product.

**Skin contact:** In case of contact with molten product – immediately rinse the skin with plenty of water for at least 15 minutes. Do not remove the molten material from the skin on your own. Obtain medical support.

**Eye contact:** Rinse eyes with plenty of water for at least 15 minutes. Obtain medical support.

**Respiratory duct exposure:** Provide fresh air supply. Immediately obtain medical support.

**Digestive tract exposure:** Immediately obtain medical support.

### 4.2. Most important acute and delayed symptoms and effects of exposure.

They are not known.

### 4.3. Indications related to any immediate medical attention and specific treatment.

In case of any disturbing symptoms or in case of an accident, immediately seek medical advice. Follow medical instructions.

## SECTION 5: Fire Fighting Measures

### 5.1. Extinguishing media and fire fighting equipment

**Appropriate extinguishing media:**

Sprayed water flow  
Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry powder

**Extinguishing media that are forbidden for security reasons:**

Strong concentrated water flow

### 5.2. Specific hazards related to the substance or mixture

**Dangerous combustion residues:**

Carbon monoxide (CO)  
Carbon dioxide (CO<sub>2</sub>)  
Nitrogen oxides  
Hydrogen cyanide

### 5.3. Information for fire-fighters

**Personal protective equipment for fire-fighters:**

Appropriate protective clothing, isolating breathing apparatus.

## SECTION 6: Accidental Release Measures – Relevant Procedure.

### 6.1. Individual and personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

**Protective equipment:**

In case of exposure to gases and vapours, apply personal respiratory protection equipment. Use personal protective equipment. (see: SECTION 8).

**Emergency procedures:**

Remove the source of ignition. Avoid contact with skin and eyes. Avoid inhalation of gases and vapour.

#### **6.1.2. For emergency personnel**

In case of exposure to gases and vapour, apply personal respiratory protection equipment. Use personal protective equipment. (see: SECTION 8).

### **6.2. Environmental precautions**

Do not allow product to reach sewage system, surface and ground water. See: SECTION 12 of this Material Safety Data Sheet.

### **6.3. Methods and materials for containment and cleaning up**

Remove mechanically.

### **6.4. Reference to other sections**

Personal Protection Equipment – see: SECTION 8.

Waste treatment – see: SECTION 13.

Environmental information – see: SECTION 12.

## **SECTION 7: Handling the substance and its storage**

### **7.1. Precautions for safe handling**

#### **Handling the substance or preparation:**

The product must be processed in well ventilated ambience. Do not breathe the fumes and vapour. If required, additionally apply an air extractor.

#### **General rules for work safety:**

Do not eat or drink while working with the product and in working areas. Do not smoke at workplace. After handling the product, wash your hands.

### **7.2. Conditions for safe storage, including the information on any mutual incompatibilities**

#### **Technical means and conditions for storage:**

Store the product in a dry and dark place. Protect the product from direct action of sunrays. For quality reasons, protect product from moisture, dust and soiling.

#### **Storage with other substances/preparations:**

See: SECTION 10.4.

Specific rules for storing with other substances or preparations were not determined.

### 7.3. Specific end applications

No recommendations were specified. Any additional information is contained In his Material Safety Data Sheet.

## SECTION 8: Exposure controls/personal protective equipment

### 8.1. Control parameters

No data available.

### 8.2. Exposure controls

**General rules of protection:** Product must be processed in well ventilated rooms. If required, additionally apply an air extractor. While working with or handling the product apply comfortable protective clothing, including that resistant to high temperatures.

**Eyes and face protection:** Use safety (protective) goggles.

**Hands protection:** Use safety gloves.

**Respiratory tract protection:** In case of dust/vapours exposure, use respiratory protection equipment with particle filter (recommended by DIN EN 149).

## SECTION 9: Physical and Chemical Properties

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

<b>State of matter:</b>	Solid
<b>Appearance:</b>	Wire
<b>Colour:</b>	Colorless and dependant on the dyestuff applied (it may be white, black).
<b>Odor:</b>	Odorless
<b>Smell threshold:</b>	Not applicable
<b>pH value:</b>	Not applicable
<b>Melting point:</b>	180 – 230 [°C]
<b>Boiling point:</b>	Not applicable
<b>Evaporation rate:</b>	Not applicable

<b>Combustibility:</b>	No data available
<b>Upper/lower flammability limit:</b>	No data available
<b>Vapour pressure:</b>	Not determined
<b>Vapour density:</b>	Not determined
<b>Density:</b>	1.16 – 1.22 [g/cm <sup>3</sup> ]
<b>Water solubility:</b>	Insoluble
<b>Solubility in other liquids:</b>	No data available
<b>Octanol/water partitioning coefficient:</b>	No data available
<b>Self-ignition temperature:</b>	No data available
<b>Thermal degradation:</b>	See: SECTION 10.4.
<b>Viscosity:</b>	No data available
<b>Explosive properties:</b>	No data available
<b>Oxidizing properties:</b>	No data available

Depending on product colour, its physical and chemical parameters may slightly differ.

## 9.2. Other information

<b>Surface tension:</b>	No data available
<b>Thermal conductivity:</b>	No data available
<b>Electrical conductivity:</b>	No data available

## SECTION 10: Stability and Reactivity

### 10.1. Reactivity

The data are not available. See: SECTION 10.3.

### 10.2. Chemical stability

The product is stable in recommended storage conditions. See: SECTION 7.2.

### 10.3. Possibility of hazardous reactions

No hazardous reactions are known in recommended storage conditions.

### 10.4. Conditions to avoid

Temperatures over 300°C.

### 10.5. Incompatible materials

They are not known.

## 10.6. Hazardous decomposition products

Combustion causes the generation of carbon oxide (CO), carbon dioxide (CO<sub>2</sub>) and hydrogen cyanide.

## SECTION 11: Toxicological Information

### 11.1. Information on toxicological effects

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

Mouth: LD50 >5.000mg/kg (rat)

The product has not been tested. The values have been indicated based on the common and well known properties mixture component(s).

**Skin irritation:** No data available.

**Eye irritation:** No data available.

**Skin sensitization:** No data available.

**Mutagenicity effect:** No data available

## SECTION 12: Ecological Information

### 12.1. Toxicity

**Effect on living organisms:** No data available.

### 12.2. Persistence and degradability

The product is not biodegradable.

### 12.3. Bioaccumulation ability

The product is not bioaccumulative.

### 12.4. Mobility in soil

No data available.

### 12.5. Results of property assessments: PBT and vPvB

No data available.

## 12.6. Other harmful or adverse effects

See: SECTION 6.2.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Do not dispose waste to sewage system. Waste should be reprocessed according to the locally obliging legal regulations, in accordance with EU 91/156/EEC, 91/689/CEE, 94/62/CEE Regulations with the relevant amendments.

## SECTION 14: Transport Information

### Sections from 14.1. to 14.5.

<b>IMDG:</b>	Not applicable/without limitations
<b>IATA:</b>	Not applicable/without limitations
<b>ADR\RID:</b>	Not applicable/without limitations
<b>ADNR:</b>	Not applicable/without limitations
<b>ICAO/IATA:</b>	Not applicable/without limitations

The information has been provided basing on the data on mixture components properties.

### 14.6. Special precautions for users

See: SECTION 6, SECTION 7 and SECTION 8 of this Material Safety Data Sheet.

### 14.7. Transport in bulk according to Annex II of MARPOL73/78 Convention and the IBC Code

No transport in bulk according to IBC Code. The information has been provided and cited based on given properties of mixture component(s).

## SECTION 15: Information on Legal Regulations

### 15.1. Safety, health and environmental regulation/legislation specific for the substance or mixture



**Devil Design** Ryszka Mateja Sp. J.

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

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Devil Design Ryszka Mateja Company have made every effort to assure that the information contained herein is to the best of their knowledge, in accordance with the facts, true and fair. Devil Design Ryszka Mateja Company cannot be responsible for any use that may be made of this information. The product has not been tested and any information contained in this document have been cited based on the data on the mixture components. Depending on the product specificity, especially its colour, physical and chemical properties of the product may change; all the values listed in this document are well known and they are extreme values. Each user is obliged to apply the product in accordance with the locally obliging legal regulations.

Relevant and applicable legal regulations: Journal of Laws 2011 No. 63 Item 322; Journal of Laws 2009 No. 20 Item 106; Journal of Laws 2012 No. 0 Item 1018 as amended, Journal of Laws 2014 item 6; Restructured European Agreement concerning International Carriage of Dangerous Goods by Road ADR; Journal of Laws 04.96.959 as amended; Journal of Laws 2003 No. 169 item 1650.

## **15.2. Chemical safety assessment**

Up to the date of last revision, no assessment of chemical safety (CSA) is available for the substance or its components described in this document.

## **SECTION 16: Other Information**

**The document has been drawn up by:** Devil Design Ryszka Mateja Sp. J.

**The date of last revision:** --/--/----