Material Safety Data Sheet

SECTION 1: Product and Company Identification

1.1. Product identification

Commercial Reference: PLA Filament 1.75mm
PLA Filament 2.85mm
PLA Filament 3.00mm

1.2. Identified applications of the substance or mixture and the uses not recommended

Identified key applications of the substance or mixture

Application: Thermal processing in the process of 3D printing.

1.3. Details of the supplier of the Safety Data Sheet

Producer: Devil Design Ryszka Mateja Sp. J.
ul. Żwirki i Wigury 65
43-190 Mikołów, Polska
NIP: 6351837318
e-mail: office@devildesign.com

SECTION 2: Hazard Identification

2.1. Classification of the substance or mixture

Classification according to CLP Regulation (WE No. 1272/2008)

Sensitising impact on skin, category 1

H317: Substance may cause allergic skin irritation.

The data have been cited based on mixture/its components properties.

2.3. Other risk

Ingestion risk. Inhalation of vapour and gas released during substance processing causes irritation of respiratory system. Gas and vapour generated during processing may cause irritation of skin and eyes.

SECTION 3: Composition and Information on Components

3.2. Mixtures

Chemical characteristics

Composition: Polylactid resin, colorant
Chemical name: Polylactid
Common name: PLA
Kind of material: Thermoplastic material

Harmful or dangerous substances

Aluminium powder

CAS Number: 7429-90-5
WE Number: 231-072-3
Concentration: 0,1 – 0,25 %

WE Classification of the hazardous substance

F	R11 (highly flammable product)
F	R15 (contact with water releases extremely flammable gases)

GHS Classification

Category 1	H228 (flammable solid)
Category 2	H261 (contact with water releases flammable gases)

Preparation of quinoline dyestuff

CAS Number: 17772-51-19
WE Number: 241-753-7
Concentration: 10 – 20% (w/w)

GHS Classification

Category 1	H317 (may cause skin allergic reaction)

The data have been cited based on mixture/its components properties. Depending on dyestuff, the properties may slightly differ.

SECTION 4: First Aid Measures

4.1. Description of first aid measures

General information: No extraordinary means are required.

Skin contact: In case of contact with melted product – immediately rinse the skin with plenty of water for at least 15 minutes. 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:
In case of ingestion do not induce vomiting. Immediately obtain medical support.

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

Unidentified – no specific symptoms noted.

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

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

SECTION 5: Fire Fighting Measures

5.1. Extinguishing media and fire fighting equipment

Appropriate extinguishing media:
Foam
Carbon dioxide (CO_2)
Dry powder

Extinguishing media that are forbidden for security reasons:
Strong concentrated water flow
Sprayed water flow

5.2. Specific hazards related to the substance or mixture

Dangerous combustion residues:

Styrene
Hydrogen cyanide (hydrocyanic acid)
Acrylonitrile
Aldehyde
Carbon monoxide (CO)
Carbon dioxide (CO_2)
Nitrogen oxides (NO_x)
Sulphur oxides
Acetone
Alcohols

When processed and in case combustible dust is likely to occur, the dust may explode if a source of fire or sparks was caused or induced by electrostatic discharge.

The data has been cited based on component/mixture properties. Depending on the dyestuff applied, the properties may slightly differ.

5.3. Information for fire-fighters

Personal protective equipment for fire-fighters:
Self-contained, isolating breathing apparatus must be worn in case of fire.

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 vapour, apply personal respiratory protection equipment. Use personal protective equipment. (see: SECTION 8).

Emergency equipment:

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.

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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling the substance or preparation:
The product must be processed in well ventilated ambience. If required, apply additional 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 and face.

Safety guidelines on the prevention of fire and explosion:

Provide appropriate measures to avoid the accumulation of electrostatic charges.

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, keep it in ambient temperature. For quality reasons, protect product from moisture, dust and soiling.

Storage with other substances/preparations:
See: SECTION 10.4.
No specific rules for storage with other substances were specified.

7.3. Specific end applications

No recommendations were specified.

SECTION 8: Exposure controls/personal protective equipment

8.1. Control parameters

Substance name: carbon black dust			
WE Number: 215-609-09	CAS Reference: 1333-86-4		
Legal ground/Legal regulations	**Update**	**Kind of value**	**Value**
Occupational concentration and exposure limits for agents and factors harmful to health for Poland. Maximum allowable concentrations and levels for harmful substances at worplace.	29/11/2002	Maximum allowable total concentration	4mg/m^3
Substance name: metallic aluminium, powdered aluminium (non-stabilised), fumes			
WE Number: 231-072-3	CAS Reference: -		
Legal ground/Legal regulations	**Update**	**Kind of value**	**Value**
Maximum allowable concentrations and levels for harmful substances at worplace.	10/10/2005	Maximum allowable total concentration	2,5 mg/m^3
Legal ground/Legal regulations	**Update**	**Kind of value**	**Value**
Maximum allowable concentrations and levels for harmful substances at worplace.	10/10/2005	Maximum allowable respirable concentration	1,2 mg/m^3
Nazwa substancji: Carbon black			
WE Number: -	CAS Number: 1333-86-4		
Legal ground/Legal regulations	**Update**	**Kind of value**	**Value**
PL NDS	No data available	Total NDS	4 mg/m^3

Product may release non-classified particles (PNOC).

Values DNEL/DMEL: No data available.
Values for PNEC: No data available.

Values have been specified based on the standard properties of component/mixture.

8.2. Exposure controls

General rules of protection: Product must be processed in well ventilated rooms. If required, apply additional air extractor. Directive 89/686/CEE with the relevant amendments must be respected and applied.

Eyes and face protection:	Use safety goggles.
Hands protection:	Use safety gloves made of leather or nitrile rubber.
Respiratory tract protection:	In case of dust/vapours exposure, respiratory protection equipment with particle filter must be used. Use the equipment in accordance with EU 8.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	Solid
Appearance:	Wire
Colour:	Colourless, and depending on the dyestuff applied it may be: white, pink, yellow, transparent light yellow, orange, raspberry, red, grey, violet, blue, transparent blue, dark blue, navy blue, green, light green, transparent light green, beige, brown, silver, gold or black.
Odour:	Sweet or metallic smell while processed
Smell threshold:	No data available
pH value:	Not relevant
Melting point:	>80^{o}C
Boiling point:	N/A
Evaporation rate:	N/A
Combustibility:	No data available
Upper/lower flammability limit:	No data available
Vapour pressure:	Not determined
Vapour density:	Not determined
Density:	1,24 g/cm^{3}
Water solubility:	Insoluble
Solubility in other liquids:	No data available
Octanol/water partitioning coefficient:	N-A
Self-ignition temperature:	>387^{o}C
Thermal degradation:	See: SECTION 10.4.
Viscosity:	4,02
Explosive properties:	No data available
Oxidising properties:	No data available
Combustion properties:	No data available

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

9.2. Other information

Surface tension:	No data available
Thermal conductibility:	Not indicated
Electrical conductibility:	Not indicated

No explosion risk.

SECTION 10: Stability and Reactivity

10.1. Reactivity

Data and details unavailable. 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 dangerous reactions are known if the product is stored in recommended conditions.

10.4. Conditions to avoid

Temperature over 230^{o}C. Electrostatic discharges. Processing product in poorly ventilated rooms. Temperature exceeding thermal degradation point of a masterbatch.

10.5. Incompatible materials

Oxidants and strong alkalis.

10.6. Hazardous decomposition products

Combustion causes forming aldehydes, carbon monoxide (CO) and carbon dioxide (CO_2).

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity: Skin: 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 of component/mixture.

Skin irritation: It may irritate skin.

Eye irritation: It may irritate eyes.

Skin sensitization: It may sensitize.

Mutagenicity effect: Mutagenicity has not been proved (Ames Test)

SEKCJA 12: Ecological Information

12.1. Toxicity

Effect on living organisms: No data available.

12.2. Persistence and degradability

The product is fully 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 i vPvB

According to the assessment results, the substance is neither PBT nor vPvB, the mixture does not comprise any substances assessed as PBT or vPvB or the report on chemical safety is not required (CSR).

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 local legal regulations, according to EU 91/15/CEE, EU 91/689/CEE, EU 94/62/CEE Regulations with the relevant amendments. The same principles apply for packaging.

SEKCJA 14: Transport Information

Sections from 14.1. to 14.5.

IMDG:	N/A Without limitations
ICAO\IATA:	N/A Without limitations
ADR\RID:	N/A Without limitations

14.6. Special precautions for users

See: SECTION 6, SECTION 7 and SECTION 8.

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

There is 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 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

The product has not been classified as a harmful product – according to EU 1272/2008 Regulation and 67/548EEC Directive. 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 Company

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