

# **Safety Data Sheet**

According to EU Directive 1907/2006, as amended

Product name: PLA

Date of issue: 23-7-2018



Version: 1.6

## **1. Identification of the substance/preparation and of the company**

<b>1.1 Trade name:</b>	PLA
<b>1.2 Use of the product:</b>	3Dprinter Filament
<b>1.3 Supplier:</b>	REDLINE FILAMENT GmbH, PleiBeweg 15, 41469 Neuss, Germany, Phone: +49(0)2131 56 90 Emergency phone number: +49 (0)177 63 77 918

## **2. Hazards identification**

<b>2.1 Classification of the substance or mixture</b>	Not classified according to Directive 1272/2008/EC.
<b>2.2 Label elements</b>	None
<b>2.3 Other hazards</b>	Danger of burns in contact with hot polymer and hazardous vapors in case of burning.

## **3. Composition/information on ingredients**

<b>3.1 Chemical characteristics:</b>	Biodegradable polymer-blend based on polylactic acid.
<b>3.2 CAS no:</b>	9051-89-2
<b>3.3 Additional information:</b>	No harmful ingredients.

## **4. First aid measures**

<b>4.1 On skin contact:</b>	In case of contact with molten polymer immediately cool the skin with cold water. Medical aid may be required to remove adhering material and for treatment of burns.
<b>4.2 After inhalation:</b>	After inhalation of decomposition gases or dust remove patient to fresh air. Contact a doctor in case of discomfort.
<b>4.3 On ingestion:</b>	No effects known. Rinse mouth with water and drink more water. Contact a doctor in case of discomfort.
<b>4.4 On eyes contact:</b>	Rinse open eyes thoroughly with water.

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## **5. Fire fighting measures**

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### **5.1 Extinguishing media**

Suitable extinguishing media: Water spray, Dry powder, Carbon dioxide (CO<sub>2</sub>). Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

### **5.2 Special hazards arising from the substance or mixture**

During incomplete combustion release of carbon monoxide, carbon dioxide and hydrocarbons.

### **5.3 Advice for fire fighters**

Fire fighting measures Evacuate non-essential personnel Move containers from fire area if you can do it without risk. Keep containers and surroundings cool with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system. Special protective equipment for fire-fighters Wear self-contained breathing apparatus and protective suit.

### **5.4 Remark:**

Accumulations of dust can be inflammable.

## **6. Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Evacuate personnel to safe areas. Do not touch or walk through spilled material. Avoid dust formation. Avoid contact with skin, eyes and clothing. Do not breathe dust. Use personal protective equipment. Ensure adequate ventilation. Risk of slipping

### **6.2 Environmental precautions**

Should not be released into the environment. Prevent further leakage or spillage if safe to do so.

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

Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Following product recovery, flush area with water.

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

Refer to section (8)

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## 7. Handling and storage

### 7.1 Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe dust. Ensure adequate ventilation. Wear personal protective equipment. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Keep containers tightly closed in a cool, wellventilated place. Protect from moisture / Water.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Components with occupational exposure limits

Contains no substances with occupational exposure limit values.

#### Biological Limit Values

Not established.

#### PNEC

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

#### DNEL

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

### 8.2 Exposure controls

#### Appropriate Engineering Controls

Ensure adequate ventilation, especially in confined areas. Keep at temperatures below 230 °C / 446 °F.

#### Individual protection measures, such as personal protective equipment Eye Protection

Tightly fitting safety goggles (EN166).

#### Hand Protection

Protective gloves (EN374): Butyl rubber. Glove thickness: 0.5 mm. Break through time: >8 hours.

#### Skin and body protection

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Long sleeved clothing.

## Respiratory Protection

In case of insufficient ventilation wear suitable respiratory equipment. Recommended Filter Type P2 / FFP2.

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Workers must be trained in the proper use and handling of this product as required under applicable regulations.

## Environmental exposure controls

The product should not be allowed to enter drains, water courses or the soil

## **9. Physical and chemical properties**

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

Appearance	Solid Filament
Odour	Odourless
Colour	depending on product grade
Odour threshold	Sweet
pH	Not applicable
Melting point	150-170 °C / 302-446 °F
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	flammable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	Ca. 1.1-1.3 g/cm <sup>3</sup>
Solubility(ies)	Insoluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	388°C
Decomposition temperature	>250°C
Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing

## **10. Stability**

### **10.1 Reactivity:**

No information available

### **10.2 Chemical stability:**

Stable under recommended storage conditions

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## **10.3 Possibility of hazardous reactions:**

No hazardous reactions observed under normal handling and storage conditions

## **10.4 Conditions to avoid**

Temperatures above 230 °C / 446 °F.

## **10.5 Incompatible materials:**

Oxidizing agents, Strong bases

## **10.6 Hazardous decomposition products**

Burning produces obnoxious and toxic fumes Aldehydes, Carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>)

## **11. Toxicological information**

### **11.1 Information on toxicological effects**

Acute toxicity: Ingestion: No known effect. Skin Contact : No known effect. Inhalation : No known effect. Product dust may be irritating to eyes, skin and respiratory system. Resin particles, like other inert materials, are mechanically irritating to eyes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea Germ Cell Mutagenicity Not known to cause heritable genetic damage. Carcinogenicity Contains no ingredient listed as a carcinogen. Reproductive Toxicity Not known to cause birth defects or have a deleterious effect on a developing fetus. Not known to adversely affect reproductive functions and organs. STOT-single exposure No known effect. STOT-repeated exposure No known effect. Aspiration Hazard No known effect.

## **12. Ecological information**

### **12.1 Toxicity environment.**

Contains no substances known to be hazardous for the

### **12.2 Persistence and degradability**

Decomposes in contact with water. Hydrolysis product ( S-lactic acid ): Readily biodegradable

### **12.3 Bio accumulative potential**

No information available.

### **12.4 Mobility in soil**

No information available.

### **12.5 Results of PBT and vPvB assessment**

This substance is not considered to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

### **12.6 Other adverse effects**

No information available.

## **13. Disposal considerations**

### **13.1 Waste treatment methods**

Waste from residues / unused products Generation of waste should be minimized, check possibility for recycling. Waste

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product can be incinerated or dumped together with domestic waste in compliance with local authority requirements. Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

Product has been classified as being non-dangerous substance according to transport regulations ADR, RID, IMDG, IATA/ICAO

<b>14.1 UN number</b>	Not applicable
<b>14.2 UN proper shipping name</b>	Not applicable
<b>14.3 Transport hazard class(es)</b>	Not applicable
<b>14.4 Packing Group</b>	Not applicable
<b>14.5 Environmental hazards</b>	No additional data is available
<b>14.6 Special precautions for user</b>	No data available
<b>14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not evaluated

## 15. Regulatory information

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

**Restrictions on use: None Other Regulations :**

No information available

**15.2 Chemical Safety Assessment**

No information available.

## 16. Other information

*Information is referenced from other manufacturers.*

*Abbreviations and acronyms*

*REACH: Registration, Evaluation, Authorisation and Restriction of Chemical substances*

*EC: European Commission*

*STOT: Specific Target Organ Toxicity*

*PBT: Persistent, Bioaccumulative, Toxic*

*vPvB: very Persistent and very Bioaccumulating*

*ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*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)*

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*RID: Règlement concernant le transport international ferroviaire des marchandises dangereuses (Regulations for the International Transport of Dangerous Goods by Rail)*

*IMDG: International Maritime Dangerous Goods Code*

*ICAO: International Civil Aviation Organization This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Regulation (EC) No. 2015/830. Label element according to Regulation (EC) No 1272/2008.*

*The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication.*

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