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## SAFETY DATA SHEET (SDS)

Issued on: 16 February, 2016

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

#### 1.1. Product identifier

Trade name: PLA Filament for 3D Printer  
Registration number: -  
Synonyms: None.

55268	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG WHITE
55285	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 750G WHITE
55267	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG BLACK
55284	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 750G BLACK
55269	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG BLUE
55271	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG GREEN
55273	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG YELLOW
55272	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG ORANGE
55270	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG RED
55274	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG NATURAL TRANSPARENT
55275	VERBATIM 3D PRINTER FILAMENT PLA 1.75MM 1KG SILVER/METAL GREY
55261	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG BLUE
55278	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG BLUE
55281	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG YELLOW
55276	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG BLACK
55280	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG GREEN
55279	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG RED
55277	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG WHITE
55283	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG SILVER/METAL GREY
55282	VERBATIM 3D PRINTER FILAMENT PLA 2.85MM 1KG NATURAL TRANSPARENT

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

Identified uses: 3D Printer Filament for Material Extrusion type.  
Uses advised against: None known.

#### 1.3. Details of the supplier of the safety data sheet

Company name: Verbatim GmbH  
Address: Dusseldorfer Str. 13 D-65760 Eschborn Germany  
Telephone: +49 (0) 6196 9001 49  
Contact person: Quality Assurance & RMA Management  
E-mail: SDS@verbatim-europe.com

1.4. Emergency telephone number +49 (0) 6196 9001 0

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## 2. HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary: Not available.

### 2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms: None.

Signal word: None.

Hazard statements: The mixture does not meet the criteria for classification.

Supplemental label information: None.

2.3. Other hazards: None known.

### SECTION 3: Composition/information on ingredients

#### General information

Chemical substance/mixture: A mixture  
 Chemical name or generic name: Polylactide resin  
 Chemical properties (chemical formula, etc): No relevant information.

#### Contents:

No.	Content	CAS number	Chemical formula	Content (%)
1	Polylactide Resin (PLA)	9051-89-2	$H[(-OCH(CH_3)CO-)]_nOH$	90-99 %

### SECTION 4: First aid measures

General information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 4.1. Description of first aid measures

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.  
 Skin contact: Wash off with soap and water. Get medical attention if irritation develops and persists.  
 Eye contact: Rinse with water. Get medical attention if irritation develops and persists.  
 Ingestion: Rinse mouth. Get medical attention if symptoms occur.

#### 4.2. Most important symptoms and effects, both acute and delayed:

Exposure may cause temporary irritation, redness, or discomfort.

#### 4.3. Indication of any immediate medical attention and special treatment needed:

Treat symptomatically.

### SECTION 5: Firefighting measures

General fire hazards: No unusual fire or explosion hazards noted.

#### 5.1. Extinguishing media

Suitable extinguishing media: Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).  
 Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

#### 5.2. Special hazards arising from the substance or mixture: During fire, gases hazardous to health may be formed.

#### 5.3. Advice for firefighters

Special protective equipment for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

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

For non-emergency personnel: Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

For emergency responders: Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions: Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up: Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

6.4. Reference to other sections: For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

### Handling:

Handle in a well-ventilated area.

Install local exhaust at 3D printers area is recommended when many printers are operated at once.

Keep away from fire (ignition source) and store at ambient temperature.

### Storage:

Protect from water, moisture and direct sunlight and store indoors at ambient temperature and well-ventilated.

## SECTION 8: Exposure Controls/Personal Protection

### Protective equipment:

Respiratory protection: Wear appropriate protective equipment to avoid inhalation or contact of gas generated from high temperature molten resin.

Hand protection: Wear the protective gloves.  
It is preferable to wear cotton work gloves or leather gloves when handling the melted resin.

Eye protection: Wear protective glasses when handling.

Skin and body protection: Wear clothing to avoid direct exposure of skin to molten resin, when handling.

## SECTION 9: Physical and Chemical Properties

Appearance Physical state:	Solid (Filament Shape)
Melting point/freezing point:	160 to 165 °C (start melting)
Auto ignition point (ignition point):	388 °C
Combustibility:	If there are ignition source, it lights off.
Specific gravity (relative density):	1.20 to 1.28 g/cm <sup>3</sup>
Solubility in water:	Insoluble
Colour:	White, Black, Blue, Green, Yellow, Orange, Red, Transparent, Silver

## SECTION 10: Stability and reactivity

### Stability (possibility of hazardous reactions):

Largely stable under normal storing/handling conditions.

There is a biodegradability and unstable against heat, light & humidity then gradually colours fade and decomposes.

Hydrolysis may occur.

When it decomposes, carbon hydride, aldehyde, other hazardous gases can be generated.

Self-reactivity: none

## SECTION 11: Toxicological information

General information:	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation:	No adverse effects due to inhalation are expected.
Skin contact:	No adverse effects due to skin contact are expected.
Eye contact:	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
Symptoms:	Exposure may cause temporary irritation, redness, or discomfort.
11.1. Information on toxicological effects	
Acute toxicity:	No data available.
Skin corrosion/irritation:	Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation:	Due to partial or complete lack of data the classification is not possible.
Respiratory sensitization:	Due to partial or complete lack of data the classification is not possible.
Skin sensitization:	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity:	AMES Test Negative
Carcinogenicity:	Due to partial or complete lack of data the classification is not possible.
Reproductive toxicity:	Due to partial or complete lack of data the classification is not possible
Specific target organ toxicity -single exposure:	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity -repeated exposure:	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard:	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information:	No information available.
Other information:	This product has no known adverse effect on human health.

Stability (possibility of hazardous reactions):

Stable under normal storing/handling conditions.

The product is stable at ambient temperature. It decomposes at temperature of 300 oC and above where

carbon hydride and other oxidation products (aldehyde, acid, alcohol etc.) are generated.

Self-reactivity: none

Other: Acute toxicity: unknown

## SECTION 12: Ecological information

12.1. Extotoxicity Effects:	EC50/72h/algae > 1100 mg/L
12.2. Persistence and degradability:	There is biodegradability and hydrolysis, so decomposes under the environment
12.3. Bioaccumulative potential:	No data available.
Partition coefficient n-octanol/water (log Kow):	Not available.
Bioconcentration factor (BCF):	Not available.
12.4. Mobility in soil:	No data available.
12.5. Results of PBT and vPvB assessment:	Not available.
12.6. Other adverse effects:	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Residual waste:	Dispose of in accordance with local regulations.
EU waste code:	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information:	Do not dump into sewers, on the ground or into any body of water. Burn in an adequate incinerator or bury in landfill in accordance with applicable regulations.
Special precautions :	Dispose in accordance with all applicable regulations.

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### SECTION 14: Transport information

ADR:	Not regulated as dangerous goods.
RID:	Not regulated as dangerous goods.
AND:	Not regulated as dangerous goods.
IATA:	Not regulated as dangerous goods.
IMDG:	Not regulated as dangerous goods.
Transport in bulk according to Annex II of Marpol and the IBC Code:	Not applicable

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### SECTION 15: Regulatory information

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

##### EU regulations

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended: Not listed.
- Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended: Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended: Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended: Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended: Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended: Not listed.
- Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended: Not listed.
- Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA: Not listed.

##### Authorizations

- Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended: Not listed.

##### Restrictions on use

- Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended: Not listed.
- Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended: Not listed.
- Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended: Not listed.

##### Other EU regulations

- Directive 2012/18/EU on major accident hazards involving dangerous substances: Not listed.
- Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended: Not listed.
- Directive 94/33/EC on the protection of young people at work, as amended: Not listed.

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Other regulations:	The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.
National regulations:	Follow national regulation for work with chemical agents.
15.2. Chemical safety assessment:	No Chemical Safety Assessment has been carried out.

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#### SECTION 16: Other information

List of abbreviations:	Not available.
References :	GESTIS Substance Database ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices EPA: AQUIRE database HSDB® - Hazardous Substances Data Bank IARC Monographs. Overall Evaluation of Carcinogenicity Raw material safety data sheet (SDS)
Information on evaluation method leading to the classification of mixture:	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. Not applicable.
Full text of any H-statements not written out in full under Sections 2 to 15:	None.
Disclaimer:	This safety data sheet (SDS) is issued based on the latest reference, data etc currently available. The information in this SDS has been carefully assessed, but no guarantee is given for its accuracy. We cannot anticipate all conditions under which this product may be used. It is the user's responsibility to take appropriate safety measures for handling. Verbatim Limited cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.