Security Data Sheet (PLA)

Biopolymer Polylactic Acid

In accordance with Commission Regulation (EU) 2015/830 of 28th May 2015 amending Regulation (EC) No 1907/2006, Annex II

1 - Identification of substances/mixtures and of the Company

Product

Name	Polylactic Acid
Commercial name	Eolas Prints PLA

Uses

Plastics for 3D printing (FFF/FDM) amongst others.

Supplier

Company	Eolas Prints S.L.
Address	Parque Empresarial Besaya D-14 39538 Reocín, Cantabria (Spain)
Telephone	+34 942735955
e-mail	info@eolasprints.com

Emergency phone (National Toxicologist Institute of Spain)

+34 915620420 (24h)

2 - Identification of risks

The substance is not classified as hazardous according to the Regulation (EC) No 1272/2008 (CLP/GHS) and the Directive 67/548/EEC

Label elements

Danger pictograms	Not applicable
Word of caution	Not applicable
Danger Warnings	Not applicable
Additional warning indications	Not applicable

Other risks

Hazards for people	Under normal conditions of use no danger to human health are noted
Environmental hazards	Under normal conditions of use, no environmental hazards are noted The product is completely recyclable
Physical-Chemical hazards	In case of thermal degradation, vapours or fumes are released Combustion if exposed to flame

The risks of this product are related to its processing:

- The molten polymer may cause burns.
- Polymer dust may present a fire hazard in sufficient concentration and the presence of an ignition source.

3 - Composition, information on components

Product

Substance name	Biopolymer polylactic acid
CAS number	9051-89-2
EC number	Not applicable
IUPAC number	Not applicable
Index number under Regulation (CE) 1272/2008	Not available

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4 - First aid

In case of inhalation	Thermal degradation vapours: oxygen therapy if necessary Consult a doctor
After skin contact	In case of irritation caused by fine dust: rinse thoroughly with water until the irritation disappears Treat the affected area with cold water
	In case of adhesion due to melted product, do not try to remove the product Cool the area with water
	In case of burns, go to a hospital or medical centre for treatment
After eye contact	In case of irritation caused by fine dust: rinse thoroughly with water until the irritation disappears. until the irritation disappears Visit an ophthalmologist
	In case of exposure to hot product splash: flush eyes with plenty of cold water
	In case of burns, go to a hospital or medical centre for treatment
In case of ingestion	Do not induce vomiting Seek medical help immediately

5 - Fire-fighting measures

Extinguishing equipment

Appropriate extinguishing equipment	Small fires: CO2, powder extinguisher and water
	Big fires: foam extinguisher and water spray for cooling fire-exposed surfaces
Inappropriate extinguishing equipment	Pressurized water jets (could help the fire to spread)

Specific hazards arising from the substance or mixture

- Complete combustion with excess O2 produces CO2 and water vapour.
- Partial combustion may produce CO, soot, aldehydes, and ketones.
- Dust may cause explosion mixed with air, initiated by a spark, flame or any ignition source.

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6 – Accidental release measures

Personal precautions, protective equipment, and emergency procedures

Non-emergency personnel	Stop the leak if it is safe to do so Be aware of the materials and conditions to be avoided Do not touch or step on spilled material
Emergency personnel	Extinguish all ignition sources Ventilate the area Prevent dust clouds from forming

Environmental precautions

Avoid entry into sewers, drains, basements, or confined areas.

Methods and materials for containment and clean-up

- If little material has been spilled, pour plenty of water on the area. Collect with sand or other non-combustible absorbent material and place in containers for later disposal.
- If a lot of material has been spilled, contain the liquid spillage with a dike for later disposal.
- Using a clean shovel, shovel the material into a clean, dry container and cover loosely; remove containers from the spillage area.

Containment

If a lot of material has been spilled, contain the liquid spillage with a dike for later disposal.

Cleaning

- If little material has been spilled, pour plenty of water on the area. Scoop up with sand or other non-combustible absorbent material and place in containers for later disposal.
- Using a clean shovel, shovel the material into a clean, dry container and cover loosely; remove containers from the spill area.

Reference to other sections

See also sections 8 and 13 of this Safety Data Sheet.

7 – Handling and storage

Precautions for safe handling

Protection measures	Be aware of materials and conditions to avoid Wash thoroughly after handling Work in accordance with engineering controls and use personal protective equipment.
Fire prevention measures	Use caution when the temperature is high
Environmental protection measures	Not available
Measures to prevent the generation of dust and aerosols	Not available
General occupational hygiene advice	Not available

Safe storage conditions

Technical measures and storage conditions	Not available
Packaging materials	Not available
Requirements for storage rooms and storage vessels	Use a closed container for storage The storage place should be cool and dry

8 – Exposure controls/personal protection

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 under REACH Regulation (EC) No 1907/2006 does not apply to polymers
DNEL	The obligation to register under REACH Regulation (EC) No 1907/2006 does not apply to polymers

Appropriate engineering controls

Measures related to the substance/mixture to prevent exposure during identified uses	Use local exhaust ventilation or other engineering controls to maintain airborne vapour exposure concentrations below the limit value below the respective threshold
Structural measures to prevent exposure	Not available
Organisational measures to prevent exposure	Not available
Technical measures to prevent exposure	Not available

Individual protection measures (personal protective equipment)

Eye/ face protection	Wear contour-fitting safety glasses (EN166)
Hand protection	Wear protective gloves (EN374): butyl rubber, thickness: 0.5 mm. (Wear time: > 8 hours) For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Use heat resistant gloves when handling hot / molten product
Other protection measures	Wear heat-resistant protective clothing when handling hot/molten product
Respiratory protection	In case of inadequate ventilation wear respiratory protection. Full-piece or half-face respiratory protective equipment (with goggles) Particulate filter device, level 1 – FFP1 (EN 149)

Environmental exposure controls

Use appropriate container to avoid environmental contamination.
Keep away from drains, surface, and ground water.

9 – Physical and chemical properties

Appearance

Physical state	Solid
Form	Pellets or filament
Colour	Off-white or colourless
Odour	No smell
Odour threshold	Not applicable

Other properties

ph.	Not applicable
Melting point/freezing point	150°C – 180°C / Not applicable
Initial boiling point and boiling range	Not applicable
Flash point	> 250°C
Explosive properties	If dust occurs
Combustion properties	No
Vapour pressure	No
Density	1,24 g/cm^3 at 25°C
Solubility[1]	Dichloromethane, Chloroform or Tetrahydrofuran
Water solubility	Insoluble
n-octanol/water (log KOW)	Not applicable
Viscosity	Not applicable
Vapour density	Not applicable
Evaporation rate	Very low
Auto-ignition temperature	388°C (ASTM E 659)
Decomposition temperature	250°C

[1]Solubility in the solvents indicated may vary depending on the amorphous or crystalline state of the polymer.

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10 – Stability and reactivity

Reactivity	Stable under normal temperature and pressure conditions
Chemical stability	Stable under normal temperature and pressure conditions
Possibility of dangerous reactions	Dust may form explosive mixture with air, initiated by sparks, flames or other ignition sources Containers may explode when heated Fire may produce irritating and/or toxic gases Inhalation of the material can be harmful
Conditions to be avoided	Sources of ignition (heat, sparks or flames) It is recommended not to heat to temperatures >230°C Prevent dust accumulation in pneumatic conveying by using filters Avoid electrostatic electricity build-up (use earthing)
Incompatible materials	Avoid contact with strongly oxidising materials Water
Hazardous decomposition products	Complete combustion with excess O2 produces CO2 and H2O vapour. Partial combustion can produce CO, soot, aldehydes, and ketones.

11 – Toxicological Information

Acute toxicity	Ingestion: no known effect Dust ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea
	Skin contact: No known effect Molten material will cause burns
	Inhalation: No known effect Dust from the product may be irritating to eyes, skin, and respiratory system Resin particles, like other inert materials, are mechanically irritating to the eyes
Germ cell mutagenicity	Not known to cause heritable genetic damage
Carcinogenicity	It does not contain any ingredients considered carcinogenic
Reproductive toxicity	Not known to cause birth defects or to have a deleterious effect on a developing foetus Not known to adversely affect reproductive organs and functions
STOT-single exposure	No known effect.
STOT-repeated exposure	No known effect.
Aspiration hazard	No known effect.

12 – Ecological Information

- Contains no substances known to be hazardous to the environment.
- Fast biodegradable under industrial composting conditions.
- The product is inherently biodegradable.
- Bio accumulative potential: Very low.

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13 – Disposal considerations

- Dispose of contents/container in accordance with local/ regional/ national/ international regulations.
- Sewage disposal-relevant information: Do not empty into drains.
- The waste must be treated in accordance with the regulations in force in each locality.
- Waste decomposes at temperatures above 60°C and humidity (industrial composting).
- Waste can be incinerated (energy recovery).
- Waste can be recycled through an authorised recycler.
- The EU recommends composting for waste treatment of this polymer waste.
- Packaging must not be reused and must be transported/delivered to an authorised recycler.

14 – Transport information

NU number	Not applicable
Official NU transport designation	Not applicable
Transport hazard class	Not applicable
Packing group	Not applicable
Environmental hazards	Not applicable
Special precautions	In case of fire: Not applicable In case of escape: Not applicable
Transport in bulk in accordance with Annex II of Marpol 73/78 and the IBC Code	Not applicable

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15 – Regulatory information

EU legislation and classification

Classification	Not regulated
Hazard identification codes	Not regulated
List of EU SVHCs	Not regulated
EU authorisation list	Not regulated
List of EU restrictions	Not regulated
EU BPR	Not regulated

Foreign regulatory information

Substance of the Rotterdam Convention	Not regulated
Substance of the Stockholm Convention	Not regulated
Substance of the Montreal protocol	Not regulated

Security assessment

No chemical safety assessment has been carried out by the supplier for this substance/mixture.

16 – Other information

Product Safety Data Sheet prepared according to Regulation (EU) 2015/830 (REACH), Annex II

Revised

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Abbreviations and acronyms

ACGIH = American Conference of Governmental Industrial Hygienists
CLP = Classification, Labelling and Packaging Regulation; Regulation (EC) No. 1272/2008
CAS No. = Chemical Abstracts Service number
EC No. = EINECS and ELINCS (see also EINECS and ELINCS)
EU = European Union
IARC = International Agency for Research on Cancer
NIOSH = National Institute for Occupational Safety and Health
NTP = National Toxicology Programme
OSHA = European Agency for Safety and Health at Work
PBT = Persistent, Bio accumulative and Toxic Substance
REACH = Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals (Regulation (EC) No. 453/2010)
SVHC = Substances of Very High Concern
vPvB = very persistent and very bio accumulative
MARPOL = International Convention for the Prevention of Pollution from Ships (IMO)
IBC = Intermediate Bulk Container
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
STOT = Specific target organ toxicity

Main bibliographical references and data sources

- Threshold Limit Values and Biological Exposure Indices of the American Conference of Governmental Industrial Hygienists. Governmental.
- NIOSH Pocket Guide: https://www.cdc.gov/niosh/npg/default.html
- National Toxicological Programme: https://ntp.niehs.nih.gov/data/index.html
- IARC monographs on the evaluation of carcinogenic risks to humans. http://monographs.iarc.fr
- EU CLP : https://echa.europa.eu/information-on-chemicals/cl-inventory-database
- TOMES-LOLI® : http://www.rightanswerknowledge.com/loginRA.asp

Classification and procedure used to derive the classification of mixtures according to Regulation (EC) No 1272/2008 (CLP)

Classification according to Regulation (EC) No 1272/2008 (CLP)	Not classified
Classification procedure	Not available

Consultancy

Do not handle until you have read and understood all safety precautions.

More information

This Safety Data Sheet (SDS) is based on the legal provisions of the REACH Regulation, as amended. Its contents are intended as a guide to handling the material in accordance with appropriate safety precautions. It is the responsibility of the addressees of this SDS to ensure that all persons who might use, handle, dispose of or come into contact with the material, it is the responsibility of the recipients of this SDS to ensure that all persons who might use, handle, dispose of, or come into contact with the product read and understand all the information contained herein. The information and instructions provided in this SDS are based on the current state of scientific and technological knowledge at the date of issue indicated. It should not be construed as any kind of guarantee of technical performance or suitability for specific applications, nor does it establish a legally valid contractual relationship. This version of the SDS supersedes all previous versions.

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