Material Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product:	PLA filament
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date:	25.10.2018

2. Hazards identification

Flammability	1	0=Minimum
Toxicity	0	1=Low
Body Contact	1	2=Moderate
Reactivity	1	3= High
Chronic	0	4=Extreme

GHS classification:

Not applicable

Label elements:

Not applicable

Signal word:

Not applicable

3. Composition/Information on Ingredients

Ingredient Name	CAS No.	EC No.	Content (%)
PLA	26100-51-6	--	>97.9
Toughener	9003-55-8	--	2
Other additives	--	--	<0.1

4. First Aid Measures

Ingestion

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Eye

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin

If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhaled

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

Notes to Physician

Treat symptomatically.

5. Fire Fighting

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Fire fighting

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

Fire/Explosion hazard

- Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.

Fire Incompatibility

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

6. Accidental Release Measures

Minor spills

- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear impervious gloves and safety glasses.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
- Do NOT use air hoses for cleaning
- Place spilled material in clean, dry, sealable, labelled container.

Major spills

- Advise personnel in area.
- Alert Emergency Services and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing. Personal Protective Equipment advice is contained in Section 8 of the SDS.

7. Handling and Storage

Precautions for safe handling

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.

Suitable container

- Lined metal can,lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility

- Avoid contamination of water, foodstuffs, feed or seed.
- Avoid reaction with oxidising agents.

Storage requirements

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

8. Exposure Controls, Personal Protection

Appropriate engineering controls

For molten materials:

Provide mechanical ventilation; in general such ventilation should be provided at compounding/ converting areas and at fabricating/ filling work stations where the material is heated. Local exhaust ventilation should be used over and in the vicinity of machinery involved in handling the molten material.

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Personal protection

Eye and face protection

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

Skin protection

See Hand protection below

Hands/Feet protection

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. Suitability and durability of glove type is dependent on usage.

Body protection

See Other protection below

Other protection

No special equipment needed when handling small quantities. Otherwise:

- Overalls.
- Barrier cream.
- Eyewash unit.

9. Physical and Chemical Properties

Information on basic physical and chemical properties:

Color	Depending on the filament type/version
Form	Strip
Odor	Odorlessness
Melting Range (°C)	No data.
Boiling Range (°C)	No data.
Flash Point (°C)	No data.
Decomposition Temp (°C)	No data.
Autoignition Temp (°C)	No data.
Upper Explosive Limit (%)	No data.
Lower Explosive Limit (%)	No data.
Volatile Component (%vol)	No data.
Molecular Weight	No data.
Viscosity	No data.
Solubility in water (g/L)	Partly Miscible
pH (1% solution)	No data.
pH (as supplied)	No data.
Vapour Pressure (kPa)	No data.
Specific Gravity (water=1)	No data.
Relative Vapour Density (air=1)	No data.
Evaporation Rate	No data.

10. Stability and Reactivity

Reactivity

See section 7

Chemical stability

Product is considered stable and hazardous polymerisation will not occur.

11. Toxicological Information

Information on toxicological affects

Acute Toxicity

LD/LC50 values relevant for classification

No data.

Primary irritant effect

On the skin

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

On the eyes

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

Inhaled

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Sensitization

No data.

12. Ecological Information

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
PLA	No Data Available	No Data Available	No Data Available	No Data Available
Toughener	No Data Available	No Data Available	No Data Available	No Data Available
Other additives	No Data Available	No Data Available	No Data Available	No Data Available

13. Disposal Considerations

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

14. Transport Information

Labels Required

Marine Pollutant: NO

Not regulated for transport of dangerous goods: UN, IATA, IMDG

15. Regulatory Information

Regulations

The product needs to follow local regulations.

16. Other Information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.