

Technical Data Sheet

Pliith™ PT101

Pliith™

I. Description

PT101 is a high heat, high viscosity product, designed for extrusion applications, suitable for applications in straw, thermoforming application, blow molding, biaxially oriented Films, 3D printing filaments, fiber spinning which exhibit a higher temperature resistance.

II. Typical Properties

Physical properties	Typical Value	Method
Density g/cm ³	1.25±0.05	ISO 1183
Melt Flow Rate g/10min (190 °C, 2.16kg)	4 ± 1	ISO 1133
Melting Point °C	>170	DSC
Glass Transition Temperature °C	55-65	DSC
Optical purity % isomer	>99%L	Pliith Method
Mechanical properties	Typical Value	Method
Tensile Strength MPa	≥60	ISO 527
Elongation at Break %	≥3	ISO 527
Notched Impact Strength kJ/m ²	≥2	ISO 179

III. Applications

- straws
- trays and coffee cup lids
- 3D printing filaments
- durable daily necessities

IV. Process Details

General screw, with length-to-diameter ratios from 24:1 to 32:1, and compression ratios from 2.5:1 to 3:1;

Resin moisture content below 400 ppm;

Clean extruder with polystyrene or polypropylene after startup and before shutdown;

Extrusion processing	
Hopper Temperature	20-40 °C
Melt Temperature	180-200 °C
Die Temperature	190-210 °C

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V. Drying:

PT101 has been crystallized and dried at the factory, the crystallinity is higher than 37%, the water content is less than 400ppm, and it is packaged in aluminum foil paper bag, which is ready to be opened in the process of use without further processing. After the resin is exposed to air for more than 30 minutes, or after re-feeding, it needs to be re-dried. It is recommended to use dehumidified and dried air to dry Polylactic acid resin. The recommended drying conditions are as follows:

Drying process	
Drying Time (hours)	4-6
Drying Temperature (°C)	100
Air Dew Point (°C)	- (40~42)

VI. Hazards and Handling Measures

Polylactic acid has a very low degree of toxicity, and should cause no unusual problems from incidental ingestion or eye and skin contact under normal usage conditions. However, caution is advised when handling, storing, using, or disposing of this resin. For safe handling of the product, it is necessary to maintain strict management and control dust. In case of localized contact with the melt, please use gloves with insulation for thermal protection. During the manufacturing process, workers should be protected from contact with the molten resin. Handling and manufacturing of the resin may generate vapors and dust, which could cause irritation to the eyes and upper respiratory tract. In dusty environments, please use an approved dust respirator. It is recommended to keep the polymer processing area well ventilated.

VII. Waste Disposal

Do not pour the waste into any sewers, on the ground, or into bodies of water. For unused or uncontaminated materials, the preferred option is to recycle into the process, otherwise, send to an incinerator or other thermal destruction device. For used or contaminated materials, adopt the same disposal methods above, but additional evaluation is required. Disposal must comply with relevant laws and regulations.

***The above material physical properties and processing guidelines are typical experimental processing data and are provided for reference only. Applicability to the customer and specific parts must be verified and confirmed by the customer.**