

Technical Data Sheet

Product Name: PLA-Rainbow

Version: 1.0

Date: 21.01.2024



MAERTZ

Dimensions

Size	Ø Tolerance	Roundness	Size
1.75 mm	± 0.05 mm	± 0.05 mm	1.75 mm
2.85 mm	± 0.10 mm	± 0.10 mm	2.85 mm

Material Properties

Description	Typical Value	Test Method	Description
Density	1.228 g/cc	ISO 1183, GB/T 1033	Density
Melt Index (MFR)	10.48 g/10 min (210 °C/2.16 kg)	ISO 1133, GB/T 3682	Melt Index (MFR)
Glass Transition Temperature	65.6 °C	DSC, 10 °C/min	Glass Transition Temperature
Melting Temperature	182.83 °C	DSC, 10 °C/min	Melting Temperature
Crystallization Temperature	92.4857 %	DSC, 10 °C/min	Crystallization Temperature
Vicat Softening Temperature	64 °C	ISO 306, GB/T 1633	Vicat Softening Temperature
Heat Deflection Temperature (HDT)	54 °C (ISO 75 1.8 MPa)	ISO 75 0.45 MPa	Heat Deflection Temperature (HDT)
Tensile Strength at Yield	47.636 MPa	ISO 527, GB/T 1040	Tensile Strength at Yield
Strain at Yield	10.922 %	ISO 527, GB/T 1040	Strain at Yield
Strain at Break	47.290 %	ISO 527, GB/T 1040	Strain at Break
E-Modulus	400.339 MPa	ISO 527, GB/T 9341	E-Modulus
Bending Modulus	2574.397 MPa	ISO 178, GB/T 9341	Bending Modulus
Bending Strength	176.673 MPa	ISO 178, GB/T 9341	Bending Strength
Impact Strength	2.819 kJ/m ²	ISO 179, GB/T 1043	Impact Strength

Technical Data Sheet

Layer Adhesion (Impact Strength - Z)	2.117 kJ/m ²	ISO 179, GB/T 1043	Layer Adhesion (Impact Strength - Z)
Moisture Absorption	0.11 %	ISO 62, 23 °C, 50 % RH	Moisture Absorption
Description	Typical Value	Test Method	Description

Guidelines for Print Settings

Description	Typical Value
Printing Temperature	200 – 240 °C
Build Plate Compatibility	BuildTak®, Glass, BlueTape, PEI
Bed Temperature	55-70 °C (Glue recommended)
Cooling Fan	100 %
Drying Settings	45-50 °C (Blast Drying Oven)
Printing Speed	50-300 mm/s
AMS Compatibility	Yes
Raft Separation Distance	0.2 mm (Settings are based on a 0.4 mm nozzle)
Retraction Speed	30 mm/s
Hotend Compatibility	0.2 mm, 0.3 mm, 0.4 mm, 0.6 mm, 0.8 mm, 1.0 mm nozzle
Environmental Temperature	25 °C (Room temperature)

Packaging:

All spools are sealed and packed with silica gel to prevent moisture.

Handling and Storage:

The typical values in this datasheet are provided for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly depending on printing conditions. The final performance of printed parts depends not only on the materials but also on design, environmental conditions, printing parameters, and other factors. Product specifications are subject to change without prior notice. Each user is responsible for determining the safety, legality, technical suitability, and disposal/recycling practices of Maertz materials for their intended application. Maertz provides no warranty unless specifically announced for suitability for a particular use or application. Maertz is not liable for any damages, injuries, or losses caused using Maertz materials in any application.

Storage:

Cool and dry (15-25°C) and away from UV light. This enhances the shelf life significantly.