Protopasta
3D Printing Filament

Technical Data Sheet Rev. 1

Quantum Dots (HTPLA)

Protopasta HTPLA is a corn-based biopolymer made in the US. We conduct all compounding and extrusion in-house in our Vancouver, WA facility, and all of our materials come standard on recyclable spools.
Quantum Dot HTPLA is available at protopasta.com in Red, Orange, Yellow, and Green.

Material Properties

Properties	Value/Description
Base material	Heat-treatable PLA
Characteristics	Low odor, non-toxic, renewably sourced
Molecular structure	Amorphous or partially crystalline *(Amorphous as printed, part crystalline when heat-treated) (Melting resets crystalline structure to amorphous state)*
Additives	InP-based quantum dots (0.04%)
Density	approx. 1.24 g/cc
Length	approx. 346 m/kg (1.75 mm)
Min bend diameter	15 mm (1.75 mm)
Glass transition (Tg) onset	approx. 60 deg C (140 deg F)
Melt point (Tm) onset	approx. 155 deg C (310 deg F)
Max use	Tg for amorphous, Tm for crystalline

Use limit is geometry-, load-, & condition-dependent

Print Settings

(Based on BambuLabs Generic PLA profile)

Setting	Value
Nozzle Temperature	**220-240C**
Heated Bed Temperature	**55-65C**
Print Speed	**100-150mm/s**
Flow Rate/Extrusion Multiplier	**100%**
Extrusion Width	**.45mm (.05mm larger than nozzle size)**
Volume Flow Rate	**10-12mm³/s**

We do not recommend drying our PLA-based materials. If you notice evidence of moisture (surface defects, popping sounds, underextrusion, etc), these can be addressed in the settings by increasing the speed and/or decreasing the temperature.

Results may vary based on print settings, as well as print quality.

For additional support, please reach out to support@protoplant.com.