

# Technical Data Sheet

**Chemical Name:**

Poly(lactic acid)

**Main Applications:**

Concept modeling, Educational projects, Design objects, Ideal for high resolution or fast printing.

**Description:**

PLA+ is an improved version of PLA, suitable for replacing ABS in many aspect. Is one of the most popular materials used in desktop 3D printing. We use pure grade Ingeo™ certified resins to ensure the best printing results. Our filament has passed a defined set of tests performed by NatureWorks to ensure the product quality.

**Key Aspects:**

It provides great visual quality and has very low shrinkage and warp. Its high impact resistance is similar to that of ABS and is ideal for high resolution or fast printing. It has fast crystallization, which enables printing without support and with very fine detail. Post-annealing in the range of 80-130°C can be used to promote crystallization and improve the heat deflection temperature of the 3D printed part.

**Certifications:**

Our PLA + has been approved by the FDA and may therefore be used in food packaging materials and, as such, is a permitted component of such materials pursuant to section 201(s) of the Federal, Drug, and Cosmetic Act, and Parts 182, 184, and 186 of the Food Additive Regulations.

**Diameter:**

1.75 mm, 2.85 mm

**Meters per 750 g:**

251.462 / 94,811

**Weight:**

750 g

**Weight per meters:**

2.98 / 7,91 g

**Density:**

1.24

**Meters per kg:**

335.283 / 126,415

**Color Information:**

**Color:**

**PANTONE:**

Black	6C
Blue	2935 C
Bronze	17-1028 TPX
Copper	876 C
Gray	8402 C
Green	17-6153 TCX
Light Blue	2225C
Light Gray	428 C
Light Green	802 C
Light Yellow	Yellow U
Natural	--
Neon Green	802 C
Neon Orange	172 C
Neon Yellow	809 C
Orange	1505 C
Pink	919 C
Red	485 C
Silver	427 CP
Skin	489 C
White	11-4001
Yellow	1235 C

**Printing Settings**

<b>Printing Temperature</b>	190-215 °C
<b>Density (g/cc)</b>	1.24
<b>Build Plate Temperature</b>	Optional 50-70 °C
<b>Cooling Fans</b>	YES (except 1st layer)

**Mechanical Properties**

**Typical**

**ASTM Method**

<b>Tensile stress at yield, psi (MPa):</b>	7,440 (51)	D 638
<b>Tensile strength, psi (MPa):</b>	7,290 (50)	D 638
<b>Tensile elongation %:</b>	3,31	D 638
<b>Izod impact strength, notched , ft-lb/in (J/m)</b>	2,21 (118)	D 256
<b>Clarity :</b>	Opaque	--
<b>Heat distortion, (°C):</b>	80-90	E 2092

**Disclaimer:**

This TDS, based on current knowledge and experience, contains a general summary of hazards and is consistent with the information provided by the supplier. No liability can be assumed for the accuracy and completeness of this information. The information in this TDS applies for this specific material only. It therefore does not apply for its usage in combination with other materials or ways of processing. It is user's responsibility to read and understand this information and incorporate it into individual safety programs, according to all legal and regulatory applicable procedures. Smart International gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the user shall determine the quality and suitability of the product. Smart International expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights.