IEMAI®

3D printing solutions for high performance materials

PLA Technical Data Sheet(TDS)

Polylactic Acid (PLA) is a plastic extract from starch (commonly from corn) which is low environmental impact. It is a derivative of starch, green and renewable, a biodegradable material (degrade by itself in the soil), which is environmentally friendly.

IEMAI 3D high performance PLA filament is based on FFF/FDM technology, with a commonly used diameter of 1.75 mm, 190-220ºC printing temperature,50ºC bed temperature (May not necessary), having excellent interlayer adhesion which greatly improve the strength and shock resistance of the prototype.

PLA can print large models without a heating platform and warping will not happen easily.iT has a low shrinkage rate and performs well even when printing large-size models.PLA is widely used in education, home, machinery, electronic appliances, instrumentation, and other fields

Physical	Condition	Test Method	Typical Value
Density		ASTM D1505	1.24 g/cm^3

Mechanical	Condition	Test Method	Typical Value
Tensile Strength	MD	ASTM D882	110,3 MPa
	TD	ASTM D882	144,7 MPa
Tensile Modulus	MD	ASTM D882	3309 MPa
	TD	ASTM D882	3861 MPa
Elongation at Break	MD	ASTM D882	160%
	TD	ASTM D882	100%
Elmendorf Tear	MD	ASTM D1922	15g/mil
	TD	ASTM D1922	13g/mil

IMPACT	Condition	Test Method	Typical Value
Spence Impact			2.5 J

Thermal	Condition	Test Method	Typical Value
Melting Point		ASTM 3418	145-160 ºC

Transmission Rates	Condition	Test Method	Typical Value
Oxygen		D1434	675 cc-mil/ m2-24hr-atm
Carbon Dioxide		Internal	2.850 cc-mil/ m2-24hr-atm
Water Vapor		ASTM F1249	375 g-mil/m2-24

Optical	1.50 mm		HB

Haze		ASTM D1003	2.10%
Gloss	20ºC	ASTM D1003	90

Print Recommendation	
Nozzle Temperature	190 -220 ºC
Bed Temperature	0-50 ºC
Print Speed	30-70 mm/s
Chamber Temperature	0-40 °C
Cooling Fan	0-100%