

## PAHTCF

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Polyamide is a thermoplastic that is used in wide range of applications in different industries. With its special formulation, it brings more dimensional stability and allows to work under 150°C continuous temperatures with a peak temperature of 180°C in comparison to a standard PA. 15% carbon fiber reinforcement makes it stiffer thus open new fields for the printing of demanding applications. For standard FFF printers PAHT CF15 is a high-performance 3D printing filament that opens new application fields in FFF printing. In parallel to its advanced mechanical properties, dimensional stability and chemical resistance, it has very good processability. It works in any FFF printer with hardened nozzle.

PAHT CF15 combines high temperature and chemical resistance with extreme mechanical properties

## PAHTCF - Technical information including:

General Properties		Standard
Printed Part Density (dry)	1232 kg/m <sup>3</sup> / 76.9 lb/ft <sup>3</sup>	ISO 1183-1
Printed Part Density (conditioned)	1234 kg/m <sup>3</sup> / 77.0 lb/ft <sup>3</sup>	ISO 1183-1

Thermal Properties		Standard
HDT at 1.8 MPa (dry)	92 °C / 198 °F	ISO 75-2
HDT at 0.45 MPa (dry)	145 °C / 293 °F	ISO 75-2
HDT at 1.8 MPa (conditioned)	91 °C / 196 °F	ISO 75-2
HDT at 0.45 MPa (conditioned)	128 °C / 262 °F	ISO 75-2
Glass Transition Temperature	70 °C / 158 °F	ISO 11357-2
Crystallization Temperature	180 °C / 356 °F	ISO 11357-3
Melting Temperature	234 °C / 453 °F	ISO 11357-3
Melt Volume Flow Rate	42.2 cm <sup>3</sup> /10min / 2.6 in <sup>3</sup> /10min (275°C/5kg)	ISO 1133

Mechanical Properties   Conditioned specimens				
Print direction	Standard	XY	XZ	ZX
		Flat	On its edge	Upright
Tensile strength	ISO 527	62.9 MPa / 9.1 ksi	-	19.1 MPa / 2.8 ksi
Elongation at Break	ISO 527	2.9 %	-	0.8 %
Young's Modulus	ISO 527	5052 MPa / 733 ksi	-	2455 MPa / 356 ksi
Flexural Strength	ISO 178	125.1 MPa / 18.1 ksi	121.9 MPa / 17.7 ksi	56.0 MPa / 8.1 ksi
Flexural Modulus	ISO 178	6063 MPa / 879 ksi	6260 MPa / 908 ksi	2190 MPa / 318 ksi
Flexural Strain at Break	ISO 178	No break	3.6 %	4.0 %
Impact Strength Charpy (notched)	ISO 179-2	5.1 kJ/m <sup>2</sup>	5.3 kJ/m <sup>2</sup>	1.6 kJ/m <sup>2</sup>
Impact Strength Charpy (unnotched)	ISO 179-2	21.9 kJ/m <sup>2</sup>	20.4 kJ/m <sup>2</sup>	2.8 kJ/m <sup>2</sup>
Impact Strength Izod (notched)	ISO 180	6.5 kJ/m <sup>2</sup>	5.8 kJ/m <sup>2</sup>	-
Impact Strength Izod (unnotched)	ISO 180	16.3 kJ/m <sup>2</sup>	15.1 kJ/m <sup>2</sup>	4.1 kJ/m <sup>2</sup>