

PPSU Technical Data Sheet (TDS)

PPSU is a type of high temperature aromatic sulfone polymer. For a long time, it has been considered as one of the most excellent composite polymers in plastic field. PPSU can be used under a high temperature of 180°C, PPSU has an excellent hydrolysis resistance and able to resist common acid and bases over a broad temperature range.

PPSU also offers superior high heat deflection temperature, able to withstand repeated steam sterilization, good electrical properties, and resistance to environmental stress cracking.

IEMAI 3D high performance PPSU filament is based on FFF/FDM technology, with a diameter of 1.75 mm, having excellent inter-layer adhesion, which greatly improve the strength, durability, and shock resistance of the prototype.

Since PPSU has excellent resistance in heat and chemical, which is suitable to demanding applications such as aerospace, automotive, chemical, and medical industries.

General Properties		Standard
Printed Part Density	1208 Kg/m ³ / 75.4 IB/ft ³	ISO 1183-1

Thermal Properties		Standard
HDT at 1.8MPa	212 °C / 414 °F	ISO 75-2
HDT at 0.45 MPa	218 °C / 424 °F	ISO 75-2
Vicat softening point at 50 N	220 °C / 428 °F	ISO 306
Glass Transition Temperature	220 °C / 428 °F	ISO 11357-2
Melt Volume Rate	39 cm ³ /10 min / 2.38 in ³ /10 min (360 °C, 10 kg)	ISO 1133
Coefficient of Thermal Expansion	55 E-6/K	ISO 11359-2
Flammability 12 s. vertical	Passed (thickness 1.59 and 6.35 mm)	FAR 25.853 (a)
Flammability 60 s. vertical	Passed (thickness 1.59 and 6.35 mm)	FAR 25.853 (a)

Mechanical Properties Dried specimen			
Print direction	Standard	XY	ZX
		Flat	Upright
Tensile strength	ISO 527	65.1 MPa / 9.4 ksi	51.6 MPa / 7.5 ksi
Elongation at Break	ISO 527	6.50%	3.20%



3D printing solutions for high performance materials

Young's Modulus	ISO 527	2037 MPa / 295 ksi	2036 MPa / 295 ksi
Flexural Strength	ISO 178	92.6 MPa / 13.4 ksi	96.5 MPa / 14.0 ksi
Flexural Modulus	ISO 178	2152 MPa / 312 ksi	1999 MPa / 290 ksi
Impact Strength Charpy (notched)	ISO 179-2	13.8 kJ/m ²	5.5 kJ/m ²
Impact Strength Charpy (unnotched)	ISO 179-2	200.7 kJ/m ²	22.6 kJ/m ²
Impact Strength Izod (notched)	ISO 180	12.0 kJ/m ²	5.5 kJ/m ²
Impact Strength Izod (unnotched)	ISO 180	119 kJ/m ²	14.3 kJ/m ²

Print Recommendation	
Nozzle Temperature	360 -400 °C
Bed Temperature	140 -160 °C
Print Speed	30-50 mm/s
Chamber Temperature	90-150 °C
Cooling Fan	OFF