



Ultrafuse® PPSU

Welcome to the World of High Temperature Stable Applications!

Ultrafuse® PPSU was specially developed for FFF printing based on BASF's advanced Ultrason® materials. The Ultrason® resins are amorphous thermoplastics derived from polyethersulfone (PESU), polysulfone (PSU) and polyphenylsulfone (PPSU) and ensure very high thermal resistance.

With its wide spectrum of material performance advantages, Ultrafuse® PPSU can be successfully used in applications where other plastics, e.g. polyamide, polycarbonate, polyoxymethylene and polyalkylene terephthalates, fail to meet the performance specifications. With its inherent flame-retardant properties, it is an especially suitable material for the aerospace industry.

Benefits at a Glance

- Inherently flame retardant
- Short-term temperature resistance up to 220 °C
- Resistant to long-term service temperatures up to 180 °C
- High dimensional stability
- Creep strength at high temperatures
- Resistant to hot water and coolants
- Oil-resistant, even at temperatures up to 170 °C
- Fuel and fluorine resistant

Example Applications

- Suitable for autoclaving processes
- Aerospace industry
- All applications exposed to high temperatures

Material Properties

Tensile Strength (MPa)	51.6 (ZX), 65.10 (XY)
Flexural Modulus (MPa)	1999 (ZX), 2152 (XY)
Elongation at Break	3.2% (ZX), 6.5% (XY)
Impact Strength Izod notched (kJ/m²)	5.5 (ZX), 12.0 (XY)
Impact Strength Izod unnotched (kJ/m²)	14.3 (ZX), 119.0 (XY)
HDT @ 0.45 MPa	218 °C

Printing Guidelines

Nozzle Temperature	390-410 °C
Build Chamber Temperature	170-210 °C
Bed Temperature	220 °C
Bed Material	BASF fiber-reinforced build sheet
Nozzle Diameter	≥ 0.4 mm
Print Speed	25-50 mm / s

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