

Print date: 25-09-2023

Version: 2.0

Product specifications

PEI ULTEM 9085 is an amorphous ultra-performance PEI (Polyether Imide) 3D printer filament. It combines exceptional dimensional stability with good chemical resistance. The material has a glass transition temperature of 186°C.

PEI ULTEM 9085 is a flame retardant 3D printing filament with low smoke evolution. It meets the UL 94 V-0 and 5VA ratings. The material combine excellent layer bonding, dimensional accuracy, a high impact resistance, durability and a high tensile strength into one filament.

Important key features

- Glass transition temperature of 186°C
- Flame retardant with UL 94 V-0 and 5VA ratings
- Low smoke evolution and low smoke toxicity
- Excellent dimensional stability
- Long-term hydrolytic stability
- Good chemical resistance properties

Suitable applications

- Electrical applications
- Chemically-resistant parts
- Durable parts
- Aerospace applications
- Automotive

Material properties

Material properties	Typical value	Test Method
Density	1.34 g/cm ³	ISO 1183-1
Melt flow rate (295 °C)	8.9 g/10 min	ASTM D1238
Water absorption (Saturation, 23 °C)	0.39 %	ISO 62
Moisture absorption (23 °C/ 50% RH)	0.17 %	ISO 62
Melt volume rate (360 °C/5.0 kg)	65 cm ³ /10 min	ISO 1182

Mechanical properties

Tensile stress @ yield (5mm/min)	84 MPa	ASTM D738
Tensile stress @ break (5mm/min)	74 MPa	ASTM D738
Tensile modulus (5mm/min)	3440 MPa	ASTM D738
Tensile strain @ yield (5mm/min)	7%	ASTM D738
Tensile strain @ break (5mm/min)	72%	ASTM D738
Flexural modulus (1.3mm/min, 50mm span)	2920 MPa	ASTM D790
Flexural stress, yield (1.3mm/min, 50mm span)	138 MPa	ASTM D790
Izod notched impact strength, 23°C	115 J/m	ASTM D256
Izod notched impact strength, 80*10*4, 23 °C	13 kJ/m ²	ISO 180-1A
Charpy notched impact strength, 23°C	11 kJ/m ²	ISO 179/2C

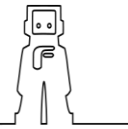
Thermal properties

Heat Deflection Temperature	153°C	ASTM D648
Vicat softening temperature (Rate B/120)	173°C	ISO 306

Flame characteristics

FAA flammability (FAR 25.853)	<5	FAR 25.853
OSU total heat release (2 minute test)	16 kW-min/m ²	FAR 25.853
OSU peak heat release rate (5 minute test)	36 kW/m ²	FAR 25.853
Vertical Burn a passes at (60s)	2 sec	FAR 25.853
Oxygen index (LOI)	49%	ASTM D2863





Storage and handling

Filament should be stored at room temperature in a dry and dark place with humidity below 15%. Recommended storage temperature is ca. 18-25°C (64.4 -77.0°F). Keep out of moisture, sunlight and direct heat. When stored properly, product has a shelf life of 24 months. To obtain the best parameters of the printed object, it is recommended to dry the material prior to usage and to 3D print it directly from a dry box.

Product export information

HS Code	Description	Origin
39169090	Monofilament for 3D printing	European Union

Disclaimer

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