

## TECAFIL PEI 9085 natural - Filament

### Chemical Designation

PEI (Polyetherimide)

### Colour

beige

### Density

1.34 g/cm<sup>3</sup> (\*2)

### Target Industries

- electronics
- automotive industry
- mechanical engineering
- aircraft and aerospace technology

General material information	parameter	value	unit	norm	comment
Diameter		1,75 +/- 0,05	mm	-	(1) standard spool body
Spool Measurements	width	55	mm	-	(2) do not dry spool >120°C
Spool Measurements	holder	Ø 52	mm	-	(3) Ø 1,75mm
Spool Measurements	outer diameter	Ø 200	mm	-	(1)
Spool Material		Polycarbonate	-	-	(2)
Filament Load per Spool		500	g	-	
Filament Length per Spool		147	m	-	(3)
Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	88	MPa	DIN EN ISO 527-1	(1) (*1)
Modulus of elasticity (tensile test)	50 mm/min	3000	MPa	DIN EN ISO 527-1	(2) (*1)
Elongation at break (tensile test)	50 mm/min	71	%	DIN EN ISO 527-1	(3) (*1)
Flexural strength	2 mm/min, 10 N	90	MPa	DIN EN ISO 178	(4) (*1)
Modulus of elasticity (flexural test)	2 mm/min, 10 N	2700	MPa	DIN EN ISO 178	(5) (*1)
Elongation at break (flexural test)	2 mm/min, 10 N	-	%	DIN EN ISO 178	(6) (*1)
Impact strength (Charpy)	max 7,5J - 23°C	-	kJ/m <sup>2</sup>	DIN EN ISO 179-1eJ	(7) (*1)
Notched impact strength (Charpy)	max 7,5J - 23°C	-	kJ/m <sup>2</sup>	DIN EN ISO 179-1eA	(8) (*1)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		180	°C	ASTM D 3418	(1) (*2)
Melting temperature		-	°C	DIN EN ISO 11357	(2) (*2)
Deflection temperature	HDT-A	153	°C	ISO-R 75 Method A	(3) (*2)
Service temperature	short term	170	°C	-	(4) (*2)
Service temperature	long term	150	°C	-	(5) (*2)
Thermal expansion (CLTE)		-	10 <sup>-3</sup> K <sup>-1</sup>	DIN EN ISO 11359-1:2	(6) (*2)
Other properties	parameter	value	unit	norm	comment
Moisture absorption		0,39	%	DIN EN ISO 62	(1) (*2)
Melt flow index (MFI)	295°C / 6,6kg	8,9	g/10 min	DIN EN ISO 1133	(2) (*2)
Processing parameter	parameter	value	unit	norm	comment
Nozzle temperature		370 - 390	°C	-	(1) required
Max. melt temperature		450	°C	-	
Print bed temperature		140 - 160	°C	-	
Build chamber temperature		170 - 190	°C	-	(1)
Nozzle diameter		0,4	mm	-	
Print speed		30 - 40	mm/s	-	
Fan speed		0	%	-	
Predrying	parameter	value	unit	norm	comment
Drying temperature		120	°C	-	(1) (*4)
Drying time		8	h	-	

→ To achieve optimum mechanical properties, it is recommended to pre-dry the material with the above mentioned parameters.

- (\*1) Values measured on injection moulded test specimens
- (\*2) Values measured on the raw material
- (\*3) The exact parameters depend on the printer used.
- (\*4) Do not exceed maximum drying temperature of 120°C
- (\*5) Properties tested on printed specimens
- (\*6) Specimens printed on Minifactory Ultra

→ The filament should preferably be stored in dry, normal temperature rooms and protected from direct sunlight.

Our information and statements reflect to current state of our knowledge and shall inform about the products and their applications. They do not assure or guarantee chemical resistance, quality of products and their merchantability in a legally binding way. Our products are not defined for use in medical or dental implants. Existing commercial patents have to be observed. The customer is solely responsible for the quality and suitability of products for the application and has to test usage and processing prior to use. Data sheet values are subject to periodic review, the most recent update can be found at [ensingerplastics.com](http://ensingerplastics.com). Technical changes reserved. European-made or imported varieties comply with REACH Regulation 1907/2006 / EC as amended. Unless otherwise noted, these values were determined by tests on injection moulded samples, dry as moulded. The corresponding values and information are no minimum or maximum values, but guideline values that can be used primarily for comparison purposes for material selection. These values are within the normal tolerance range of product properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. In order to achieve optimum mechanical properties, pre-drying of the material is recommended with the parameters mentioned above. Filaments should preferably be stored in dry rooms at normal temperatures and be protected from direct sunlight.