TECHNICAL DATA SHEET

PEI Ultem 9085

BRIEF INTRODUCTION

PEI Ultem9085 is a polyetherimide material with relatively low molding temperature and ultra-high flow. It has excellent heat resistance, high strength and toughness, excellent flame retardant, and extensive chemical resistance. It is a 3D printing material with aviation certification.

CHARACTERISTIC

Excellent heat resistance | high strength | chemical resistance | excellent toughness | flame resistance

IDENTFICATION OF THE MATERIAL	
Trade name	PEI Ultem9085
Chemical name	Polyetherimide
Application	3D Printing

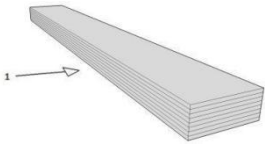
GUIDELINE FOR PRINT SETTINGS	
Nozzle temperature	355±15℃
Bed temperature	140~220℃
Chamber temperature	90~200℃
Bed modification	High temperature glue
Active cooling fan	OFF
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	30~60mm/s

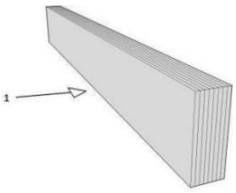
Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES		Test Method
Melt temperature	~300℃	ISO 11357
Melt flow rate (MFR) [1]	~65 g/10min	ISO 1133
Heat deflection temperature(HDT)[2]	168 ℃	ISO 75
Vicat softening temperature(VST)[3]	/	ISO 306
Density	1.28 g/cm^3	ISO 1183
Odor	Odorless	/
Solubility	Insoluble in water	/

1. test conditions: T= 365 ℃; m= 5 kg.
2. test conditions:0.45MPa;120℃/h.
3. test conditions:10N; 120℃/h.

MECHANICAL PROPERTIES|TENSILE TEST	Test Method ISO 527
All test specimens were printed using an FUNMAT PRO 610 HT，under the following conditions： Printing temperature: 355℃ Heated bed temperature：180℃ Chamber temperature: 150℃ Print speed：30 mm/s Shell thickness：0.8mm Infill under 45°	
Infill	100%
Tensile strength（Mpa）	~70
Elongation at break（%）	6~8

MECHANICAL PROPERTIES|IMPACT TEST	Test Method ISO 179
The same conditions as tensile test. 1→impact direction	
Infill	100%
Impact strength（KJ/m²）	70~75
Notch impact strength[1]（KJ/m²）	10~15

MECHANICAL PROPERTIES |FLEXURAL TEST	Test Method ISO 178
The same conditions as tensile test. 1→bending direction	
Infill	100%
Maximum force（Mpa）	140~160
Flexural modulus（Mpa）	3800~4000

1. notch type: type A

FILAMENT SPECIFICATION		Test Method
Diameter 1.75mm	1.75±0.03mm	EX1125
Max roundness deviation（1.75）	0.03mm	EX1125
Net weight on reel	1kg	EX1125

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