

TECHNICAL DATA SHEET

PETG Premium

BRIEF INTRODUCTION

PETG Premium is a perfect alternative to ABS and PLA, and just as easy to print as PLA while offering higher strength, heat resistance and good weather resistance. It is an affordable filament with balanced mechanical properties and ease of printing, good for lighting fixtures, vibrational parts and more functional design prototypes.

CHARACTERISTIC

Environmentally friendly | Good inter-layer bond | No buckling deformation | High melt flow rate.

IDENTIFICATION OF THE MATERIAL

Trade name	PETG Premium
Chemical name	Poly (ethylene terephthalate-co-1,4-cyclohexylenedimethylene terephthalate)
Application	3D PRINTING

GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	230~250°C
Bed temperature	55~85°C
Bed modification	NO
Active cooling fan	ON, 100%
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	40-80mm/s

Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES

		Test Method
Melt temperature	~200°C	ISO 11357
Glass transition temperature	~70°C	ISO 11357
Melt flow rate (MFR) ¹	8.3 g/10min	/
Heat deflection temperature(HDT)²	70.6°C	ISO 75
Vicat softening temperature(VST)³	78.5°C	ISO 306
density	1.27g/cm ³	ISO 1183
Odor	Odorless	/
Solubility	Insoluble in water	/

1. Test conditions: T= 240°C; m=2.16 kg.

2. Test conditions:0.45MPa;120°C/h.

3. Test conditions:10N; 120°C/h.

MECHANICAL PROPERTIES|TENSILE TEST

Test Method ISO 527

All test specimens were printed using an FlashForge Guider 2s under the following conditions:

Printing temperature: 240°C

Heated bed temperature: 70°C

Print speed: 45mm/s

Shell thickness: 0.8mm

Infill under 45.



Printed Vertical Z-axis

Printed horizontal X,Y-axis

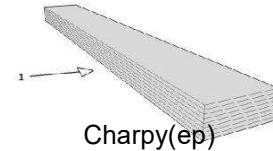
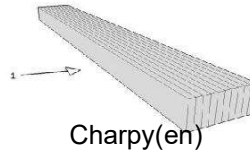
	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Tensile strength (Mpa)	11.1	18.5	25.7	36.6
Force at break (Mpa)	11.1	18.5	25.7	36.6
Elongation at break (%)	3.6	4.0	10.0	10.9
Emodulus (Mpa)	316	568	405	488

MECHANICAL PROPERTIES|IMPACT TEST

Test Method ISO 179

The same conditions as tensile test.

1→Impact direction



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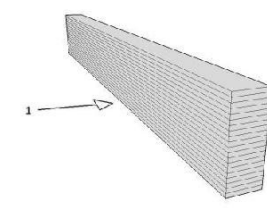
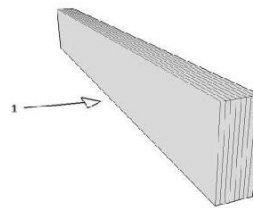
	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Impact strength (KJ/m ²)	21.1	23.4	9.0	53.0
Notch impact strength ¹ (KJ/m ²)	3.0	2.1	3.1	5.2

MECHANICAL PROPERTIES |FLEXURAL TEST

Test Method ISO 178

The same conditions as tensile test.

1→Bending direction



Normal

parallel

	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Maximum force (Mpa)	50.1	62.2	61.6	65.0
Flexural modulus (Mpa)	1443	1669	1711	1747

1. Notch Type: type A

FILAMENT SPECIFICATION		Test Method
Diameter 1.75mm	1.75±0.03mm	EX1125
Diameter 2.85mm	2.85±0.03mm	EX1125
Diameter 3.00mm	3.00±0.03mm	EX1125
Max roundness deviation (1.75)	0.03mm	EX1125
Max roundness deviation (2.85)	0.03mm	EX1125
Max roundness deviation (3.00)	0.03mm	EX1125
Net weight on reel	1kg	EX1125

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