

# TECHNICAL DATA SHEET

## Tough-PETG

### BRIEF INTRODUCTION

Tough-PETG is a toughness modified PETG developed specifically for FDM, which provides excellent printing performance by improving material fluidity. Meanwhile, it has better mechanical strength and heat resistance than PLA.

### CHARACTERISTIC

#### High impact resistance

The notched impact strength of Tough-PETG is improved to more than 2 times of that of ordinary PETG by using the toughness improvement technique, and the bonding strength of zy-axis is not affected.

#### Easy to print

Tough-PETG has excellent material flow, good molding effect, can achieve perfect printing effect in most printers.

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### IDENTIFICATION OF THE MATERIAL

<b>Trade name</b>	Tough-PETG
<b>Application</b>	3D PRINTING

### GUIDELINE FOR PRINT SETTINGS

<b>Nozzle temperature</b>	220-250℃
<b>Bed temperature</b>	70~80℃
<b>Bed material</b>	PEI or PVP solid glue
<b>Active cooling fan</b>	≤50%
<b>Recommend nozzle size</b>	0.2mm-1.0mm
<b>Raft distance</b>	0.2-0.25mm
<b>Print speed</b>	30-90mm/s
<b>Retraction Distance</b>	2-5mm
<b>Retraction Speed</b>	1800-3600mm/min

Settings are based on a 0.4mm nozzle. Nozzle temp.:250℃, Bed temp.:80℃, Printing speed:60mm/s, filling rate:100%, filling angle:+/-45°

MATERIAL PROPERTIES	Typical value	Test Method
<b>Melt index</b>	13.2g/10min	220℃ 2.16kg
<b>Glass-transition temperature</b>	78℃	ISO11357
<b>Density</b>	1.24g/cm <sup>3</sup>	ISO 1183
<b>Thermal deformation temperature</b>	73℃(1.8Mpa)/78℃(0.45Mpa)	ISO 75,Method A/ISO 75,Method B
<b>Tensile strength(X-Y)</b>	40.3+/-0.6 MPa	
<b>Elongation at Yield(X-Y)</b>	4.0+/-0.2%	
<b>Young's modulus(X-Y)</b>	1780+/-80MPa	
<b>Tensile breaking strength(X-Y)</b>	20.2+/-0.8Mpa	ISO527
<b>Elongation at break (X-Y)</b>	10.1+/-0.6%	
<b>Tensile strength(Z)</b>	39.8+/-0.4 MPa	
<b>Elongation at Yield(Z)</b>	3.8+/-0.5%	
<b>Young's modulus(Z)</b>	1820+/-110MPa	
<b>Tensile breaking strength(Z)</b>	19.2+/-0.8Mpa	ISO527
<b>Elongation at break (Z)</b>	5.0+/-0.5%	

<b>Bending strength (X-Y)</b>	62.8+/- 0.4Mpa	ISO178
<b>Bending modulus (X-Y)</b>	1919+/-54Mpa	ISO178
<b>Notch impact strength (X-Y)</b>	13.9+/-2.3KJ/m <sup>2</sup>	ISO179

**Other Suggestions:**

The bottom plate of Tough-PETG and PC material is very firmly bonded. When printing the bottom of a larger surface, the spacing between the first layer and the bottom plate of the model can be appropriately enlarged.

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