

# Polypropylene Powder

## Genuine, 3D Printed Polypropylene In-House

Produce works-like prototypes and durable end-use parts in-house with this high ductility material that can withstand repeated bending and flexing while ensuring durability. Parts showcase excellent chemical resistance and can be welded to other polypropylene parts.

*Polypropylene Powder is specifically developed for use on the Fuse 1+ 30W printer.*

**FLPLPG01**

\* May not be available in all regions

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To the best of our knowledge the information contained herein is accurate. However, Formlabs, Inc. makes no warranty, expressed or implied, regarding the accuracy of these results to be obtained from the use thereof.

## MATERIAL PROPERTIES DATA

## Polypropylene Powder

	METRIC <sup>1,2</sup>	IMPERIAL <sup>1,2</sup>	METHOD
<b>Mechanical Properties</b>			
Ultimate Tensile Strength	29 MPa	4206 psi	ASTM D 638-14 Type 1
Tensile Modulus	1640 MPa	239 ksi	ASTM D 638-14 Type 1
Elongation at Break (X/Y)	34 %	34 %	ASTM D 638-14 Type 1
Elongation at Break (Z)	16 %	16 %	ASTM D 638-14 Type 1
Flexural Strength	37 MPa	5366 psi	ASTM D 790-17
Flexural Modulus	1330 MPa	192 ksi	ASTM D 790-17
Notched Izod	31 J/m	0.58 ft-lb/in	ASTM D256-10
<b>Thermal Properties</b>			
Heat Deflection Temp. @ 1.8 MPa	58 °C	136 °F	ASTM D 648-16
Heat Deflection Temp. @ 0.45 MPa	113 °C	235 °F	ASTM D 648-16
Vicat Softening Temperature	132 °C	269 °F	ASTM D 1525
<b>Other Properties</b>			
Moisture Content (powder)	0.06 %	0.06 %	ISO 15512 Method D
Water Absorption (printed part)	0.25 %	0.25 %	ASTM D570

## SOLVENT COMPATIBILITY

Percent weight gain over 24 hours for a printed 1 x 1 x 1 cm cube immersed in respective solvent:

Solvent	24 hr weight gain, %	Solvent	24 hr weight gain, %
Acetic Acid 5%	< 0.1	Mineral oil (Light)	1.4
Acetone	0.2	Mineral oil (Heavy)	1.6
Bleach ~5% NaOCl	0.1	Salt Water (3.5% NaCl)	< 0.1
Butyl Acetate	0.7	Skydrol 5	1.1
Diesel Fuel	1.1	Sodium Hydroxide solution (0.025% pH 10)	< 0.1
Diethyl glycol monomethyl ether	0.9	Strong Acid (HCl conc)	< 0.1
Hydraulic Oil	1.5	Tripropylene glycol monomethyl ether	0.9
Hydrogen peroxide (3%)	0.3	Water	< 0.1
Isooctane	0.9	Xylene	3.0
Isopropyl Alcohol	< 0.1		

<sup>1</sup> Material properties may vary with part geometry, print orientation and temperature.

<sup>2</sup> Parts were printed using Fuse 1+ 30W, with Polypropylene Powder. Parts were conditioned at 23±2°C, 50±10% R.H. for 40+ hours.