

# 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

# 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.

<sup>3</sup> Material properties may vary based on part design and manufacturing practices. It is the manufacturer's responsibility to validate the suitability of the printed parts for the intended use.

<sup>4</sup> Polypropylene Powder was tested at NAMSA World Headquarters, OH, USA.