

Nylon 12 White

Produce high contrast and detailed white SLS parts.

Nylon 12 White Powder combines all of the great qualities of the general purpose and biocompatible Nylon 12 Powder with the customizability of white parts. Create functional prototypes and end-use customer-facing parts that can be easily dyed to match brand aesthetics as well as medical devices and models with high contrast and detail.

For best results, print Nylon 12 White Powder with inert atmospheric control on a bed temperature tuned printer. Nylon 12 White Powder is specifically developed for use on the Fuse 1+ 30W printer.



Material properties testing was completed with parts printed on a bed temperature tuned printer. Scan the QR Code to learn more about the Bed Temperature Tuning process.

Temperature
Tuning



FLP12W01

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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.

Mechanical Properties	METRIC	IMPERIAL	METHOD
Ultimate Tensile Strength	47 MPa	6900 psi	ASTM D638-14 Type 1
Tensile Modulus	1950 MPa	285 ksi	ASTM D638-14 Type 1
Elongation at Break (X/Y)	8%	8%	ASTM D638-14 Type 1
Elongation at Break (Z)	6%	6%	ASTM D638-14 Type 1
Flexural Strength	56 MPa	8100 psi	ASTM D790-17
Flexural Modulus	1500 MPa	217 ksi	ASTM D790-17
Notched Izod	28 J/m	0.5 ft-lb/in	ASTM D256-10
Thermal Properties	METRIC	IMPERIAL	METHOD
Heat Deflection Temp. @ 1.8 MPa	87 °C	189 °F	ASTM D648-16
Heat Deflection Temp. @ 0.45 MPa	177 °C	350 °F	ASTM D648-16
Vicat Softening Temperature	177 °C	350 °F	ASTM D1525
Other Properties	METRIC	IMPERIAL	METHOD
Water Absorption (printed part)	1.40%	1.40%	ASTM D570

Samples printed with Nylon 12 White have been evaluated in accordance with ISO 10993-1:2018, and has passed the requirements for the following biocompatibility risks:

ISO Standard Description	Result ^{3,4}
ISO 10993-11:2017	No systemic toxicity
ISO 10993-5:2009	Not cytotoxic
ISO 10993-23:2021	Not an irritant
ISO 10993-10:2021	Not a sensitizer
ISO 10993-11:2017	Nonpyrogenic

Flammability Properties

Testing Standard	Rating
UL 94 Section 7	HB *

* Thickness of the sample tested = 3.00mm

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%	0.2	Mineral oil, heavy	2.2
Acetone	0.2	Mineral oil, light	2.0
Bleach ~5% NaOCl	0.2	Salt Water (3.5% NaCl)	0.1
Butyl Acetate	0.2	Skydrol 5	1.9
Diesel Fuel	1.3	Sodium hydroxide solution (0.025% pH = 10)	0.1
Diethyl glycol monomethyl ether	1.0	Strong Acid (HCl Conc)	4.8
Hydraulic Oil	1.7	TPM	1.1
Hydrogen peroxide (3%)	0.1	Water	0.1
Isooctane	0.3	Xylene	0.2
Isopropyl Alcohol	0.2		

¹ Material properties may vary with part geometry, print orientation and temperature.

² Parts were printed using Fuse 1+ 30W with Nylon 12 White Powder. Parts were conditioned at 23 °C, 50% R.H. for 40 hours.

³ 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.

⁴ Nylon 12 White was tested at NAMSA World Headquarters, OH, USA.