formlabs

SLS POWDER

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

V1 **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 D 638-14 Type 1
Tensile Modulus	1950 MPa	285 ksi	ASTM D 638-14 Type 1
Elongation at Break (X/Y)	8%	8%	ASTM D 638-14 Type 1
Elongation at Break (Z)	6%	6%	ASTM D 638-14 Type 1

Flexural Properties	METRIC	IMPERIAL	METHOD
Flexural Strength	56 MPa	8100 psi	ASTM D 790-17
Flexural Modulus	1500 MPa	217 ksi	ASTM D 790-17

Other Properties	METRIC	IMPERIAL	METHOD
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 D 648-16
Heat Deflection Temp. @ 0.45 MPa	177 °C	350 °F	ASTM D 648-16
Vicat Softening Temperature	177 °C	350 °F	ASTM D 1525

Other Properties	METRIC	IMPERIAL	METHOD
Water Absorption (printed part)	1.40%	1.40%	ASTM D570

Biocompatibility Testing In Progress
Samples are currently undergoing testing for biocompatibility. When the testing has concluded, results will be updated on this sheet. In the meantime, Formlabs recommends that customers complete their own biocompatibility evaluation specific to their intended end use.

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 (%)
Acetic Acid 5%	0.2
Acetone	0.2
Bleach ~5% NaOCl	0.2
Butyl Acetate	0.2
Diesel Fuel	1.3
Diethyl glycol monomethyl ether	1.0
Hydraulic Oil	1.7
Hydrogen peroxide (3%)	0.1
Isooctane	0.3
Isopropyl Alcohol	0.2

Imperial	24 hr weight gain (%)
Mineral oil, heavy	2.2
Mineral oil, light	2.0
Salt Water (3.5% NaCl)	0.1
Skydrol 5	1.9
Sodium hydroxide solution (0.025% pH = 10)	0.1
Strong Acid (HCl Conc)	4.8
TPM	1.1
Water	0.1
Xylene	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.