

PA12 Nylon 12

PA12 is unfilled Nylon 12 for SLS. It is strong enough for functional parts, tough enough for hinges and snaps, and we print it on our EOS P 396 and EOS P 770 for prototypes and short-run production.

0.93 g/cm³

Typical part density (EOS Method)

1650 MPa

Tensile modulus, Balance (ISO 527-1/-2)

176 °C

Melting temperature (ISO 11357-1/-3)

About this material

PA12 is polyamide 12 without glass or carbon fill. White powder sinters into white parts that hold load and still stretch enough for hinges, threads, and snap-fits. Evology prints it on the EOS P 396 and EOS P 770.

Typical applications

Grippers, jigs, and fixtures; cutting guides and bone models; eyewear; automotive brackets and covers; and prototypes with hinges or threads.

Process parameter sets

PARAMETER SET	LAYER	TENSILE MODULUS [MPa]	TENSILE STRENGTH [MPa]	STRAIN AT BREAK
Balance	120 µm	1650 (X/Y/Z)	48 (X/Y), 42 (Z)	18% (X/Y), 4% (Z)
Performance	100 µm	1700 (X/Y/Z)	50 (X/Y/Z)	20% (X/Y), 10% (Z)

Balance (120 µm) trades cost, surface quality, and accuracy for general-purpose parts. Performance (100 µm) favors mechanical properties and isotropic strength under multiaxial loads. Values per ISO 527-1/-2, dry condition. Figures are representative unfilled PA12 SLS data from EOS PA 2200.

Mechanical properties, Balance 120 µm (ISO 527-1/-2)

PROPERTY	X	Y	Z	TEST
Tensile modulus [MPa]	1650	1650	1650	ISO 527-1/-2
Tensile strength [MPa]	48	48	42	ISO 527-1/-2
Strain at break [%]	18	18	4	ISO 527-1/-2
Flexural modulus [MPa]	1500	—	—	ISO 178
Shore D hardness	75	—	—	ISO 7619-1

Impact properties, Balance 120 µm

PROPERTY	X ORIENTATION	TEST
Charpy impact strength (+23 °C) [kJ/m²]	53	ISO 179/1eU
Charpy notched impact (30 °C) [kJ/m²]	4.8	ISO 179/1eA
Izod notched impact (+23 °C) [kJ/m²]	4.4	ISO 180/1A

Thermal properties, Balance 120 µm

PROPERTY	X	Z	TEST
Melting temperature [°C]	176	—	ISO 11357-1/-3
HDT at 1.80 MPa [°C]	64	57	ISO 75-1/-2
HDT at 0.45 MPa [°C]	157	145	ISO 75-1/-2
Vicat softening temperature [°C]	176	—	ISO 306/B50
Burning behavior (UL 94)	HB	—	0.5–3.2 mm

Other properties

PROPERTY	TYPICAL VALUE	METHOD
Density	0.93 g/cm³	EOS Method
Powder color	White	—
Component color	White	—

Source and notes

Values are drawn from the EOS PA 2200 Material Data Sheet (Balance) and related Process Data Sheets ([OEM source](#)) as representative data for unfilled SLS PA12. Results vary with powder grade, system parameters, job layout, moisture, and post-processing. They are not a guarantee of properties on your part.

Full page: <https://www.evologymfg.com/manufacturing-capabilities/sls-selective-laser-sintering/pa12>