

PRODUCT DESCRIPTION

Our Standard Nylon 12 material is ideal for most applications. It is **lightweight, tough, flexible yet rigid, and economical.** Nylon 12 is our choice for **prototypes and production parts.** Nylon 12 in compliance with FDA 21 CFR, §177.1500 9(b) except for alcoholic foodstuff. Nylon 12 has no porosity with wall thicknesses greater than 0.060" (1.5 mm), has exceptional chemical and fuel resistance, and can be used for fuel and liquid storage. We have examples that have held 10psi for longer than two years with no fuel loss.

MECHANICAL PROPERTIES

	VALUE	UNIT	TEST STANDARD
Flexural Modulus (23°C)	1500	MPa	ISO 178
Flexural Strength	58	MPa	ISO 178
Izod Impact Notched (23°C)	4.4	kJ/m ²	ISO 180/1A
Izod Impact Unnotched (23°C)	33	kJ/m ²	ISO 180/1U
Shore D Hardness (15s)	75	—	ISO 868
Ball Indentation Hardness	78	MPa	ISO 2039-1

3D DATA

The properties of parts manufactured using laser sintering are due to their layer-by-layer production, to some extent direction dependent. This has to be considered with designing the part and defining the build orientation.

	VALUE	UNIT	TEST STANDARD
Tensile Modulus (X Direction)	1700	MPa	ISO 527-1/-2
Tensile Modulus (Y Direction)	1700	MPa	ISO 527-1/-2
Tensile Strength (X Direction)	48	MPa	ISO 527-1/-2
Tensile Strength (Y Direction)	48	MPa	ISO 527-1/-2
Strain at Break (X Direction)	15	%	ISO 527-1/-2
Charpy Impact Strength (+23°C, X Direction) (+ 23°C)	53	kJ/m ²	ISO 179/1eU
Charpy Notched Impact Strength (+23°C, X Direction) (+ 23°C)	4.8	kJ/m ²	ISO 179/1ea

THERMAL PROPERTIES

	VALUE	UNIT	TEST STANDARD
Melting Temperature (10°C/min)	184	°C	DSC
Vicat Softening Temperature (A)	181	°C	ISO 306
Vicat Softening Temperature (50°C/h 50N)	163	°C	ISO 306

OTHER PROPERTIES

	VALUE	UNIT	TEST STANDARD
Density (Laser Sintered)	930	kg/m ³	EOS Method

CHARACTERISTIC

Processing –

Laser Sintering

Delivery Form –

White

Chemical Resistance –

General Chemical Resistance

Ecological Valuation –

Food Approved FDA 21 CFR

Manufacturer –

EOS (PA 2201/PA12)

Source: www.materialdatacenter.com
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The data corresponds to our knowledge and experience at the time of publication. They do not on their own represent a sufficient basis for any part design, neither do they provide any agreement about or guarantee the specific properties of a product or part or the suitability of a product or part for a specific application. It is the responsibility of the producer or customer of a part to check its properties as well as its suitability for a particular purpose. This also applies regarding the consideration of possible intellectual property rights as well as laws and regulations. The data are subject to change without notice as part of EOS' continuous development and improvement processes.

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