ZELTA3D

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MJF NYLON PA12 FUNCTIONAL MATERIAL DATASHEET

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Description

Our MJF Nylon PA12 is a tough and durable Nylon material. This material will have good thermal and mechanical properties suitable for outdoor applications. As this material is highly functional, it can be used to replace injection molded parts. We highly recommend this material for low volume manufacturing parts.

OEM Technical Data

HP 3D High Reusability PA 12

Strong, lowest cost,[1] quality parts

Produce strong, functional, detailed complex parts

- Robust thermoplastic produces high-density parts with balanced property profiles and strong structures.
- Provides excellent chemical resistance to oils, greases, aliphatic hydrocarbons, and alkalies.[2]
- Ideal for complex assemblies, housings, enclosures, and watertight applications.
- Biocompatibility certifications—meets USP Class I-VI and US FDA guidance for Intact Skin Surface Devices.[3]

Quality at the lowest cost per part[1]

- Achieve the lowest cost per part[1] and reduce your total cost of ownership.[4]
- Minimize waste—reuse surplus powder batch after batch and get functional parts, no throwing away anymore.[5]
- Get consistent performance while achieving 80% surplus powder reusability.[6]
- Optimize cost and part quality—cost-efficient material with industry-leading surplus powder reusability.[5]

Engineered for HP Multi Jet Fusion technology

- Designed for production of functional parts across a variety of industries.
- Provides the best balance between performance and reusability.[7]
- Achieves watertight properties without any additional post-processing.
- Engineered to produce final parts and functional prototypes with fine detail and dimensional accuracy.

Picture taken after graphite post-processing

For more information, please visit
hp.com/go/3DMaterials

Technical specifications[8]

Category	Measurement	Value	Method
General properties	Powder melting point (DSC)	187°C/369°F	ASTM D3418
	Particle size	60 µm	ASTM D3451
	Bulk density of powder	0.425 g/cm³/0.015 lb/in³	ASTM D1895
	Density of parts	1.01 g/cm³/0.036 lb/in³	ASTM D792
Mechanical properties	Tensile strength, max load,[9] XY	48 MPa/6960 psi	ASTM D638
	Tensile strength, max load,[9] Z	48 MPa/6960 psi	ASTM D638
	Tensile modulus,[9] XY	1800 MPa/261 ksi	ASTM D638
	Tensile modulus,[9] Z	1800 MPa/261 ksi	ASTM D638
	Elongation at break,[9] XY	20%	ASTM D638
	Elongation at break,[9] Z	15%	ASTM D638
	Flexural strength (@ 5%),[10] XY	65 MPa/9425 psi	ASTM D790
	Flexural strength (@ 5%),[10] Z	70 MPa/10150 psi	ASTM D790
	Flexural modulus,[10] XY	1730 MPa/251 ksi	ASTM D790
	Flexural modulus,[10] Z	1730 MPa/251 ksi	ASTM D790
	Izod impact notched (@ 3.2 mm, 23°C), XYZ	3.5 kJ/m²	ASTM D256 Test Method A
Thermal properties	Heat deflection temperature (@ 0.45 MPa, 66 psi), XY	175°C/347°F	ASTM D648 Test Method A
	Heat deflection temperature (@ 0.45 MPa, 66 psi), Z	175°C/347°F	ASTM D648 Test Method A
	Heat deflection temperature (@ 1.82 MPa, 264 psi), XY	95°C/203°F	ASTM D648 Test Method A
	Heat deflection temperature (@ 1.82 MPa, 264 psi), Z	95°C/203°F	ASTM D648 Test Method A
Reusability	Refresh ratio for stable performance	20%	
Recommended environmental conditions	Recommended relative humidity	50-70% RH	
Certifications	USP Class I-VI and US FDA guidance for Intact Skin Surface Devices, RoHS,[11] EU REACH, PAHs, UL 94, UL 746A		

*DISCLAIMER: Respective users should still conduct their own testing to determine suitability of material we do not make any guarantees or warranties of any kind, expressed or implied. We will only advise based on OEM material specifications.