

415-GF

Glass Reinforced Polyamide



Engineered Materials For Rapid Manufacturing

“A polyamide reinforced with glass which produces stiff parts capable of performing in elevated temperature environments while eliminating waste powder from your process.”

- Material further stabilized against degradation common in glass filled materials. Eliminates waste and dramatically reduces cost.
- Produces mechanically stiff parts that can survive elevated temperature conditions.
- Tightly controlled particle size distribution results in excellent surface finish and reduces post processing.



Based on the 250-C polymer, Advanced Laser Materials' RM² 415-GF product is reinforced with glass to produce parts with high stiffness, superior dimensional stability, and elevated temperature resistance.

Whereas most glass filled polyamide materials experience accelerated material degradation when processed, ALM's 415-GF product is formulated specifically to combat this. A special blend of additives stabilizes this derivative of the 250-C material against degradation in your production process and virtually eliminates waste powder.

While reducing waste, these additives also ensure high repeatability of results from your parts production process, a key requirement for rapid manufacturing. The exceptional surface finish of the 415-GF material reduces post-processing times and allows delivery of high quality products to customers.

ALM's line of Rapid Manufacturing Materials (RM²) are produced to high quality standards. Every material shipment is accompanied by detailed quality conformance documents to support your quality manufacturing standards.



RM² 415-GF Data Sheet

MATERIAL PROPERTIES	TEST	RM ² 415-GF
Density, Bulk	ASTM D1895	0.68 g/cc
Particle Size		
	d90 Laser Diffraction	66 µm
	d50 Laser Diffraction	47 µm
	d10 Laser Diffraction	35 µm

THERMAL PROPERTIES	TEST	RM ² 415-GF
Melting Point	ASTM D3418	181 °C
Melt Flow Rate (180 sec., 5.0 kg, 235 °C)	ASTM D1238	17 ± 3 g/10 min

TYPICAL PART PROPERTIES	TEST	RM ² 415-GF
Tensile Strength, Ultimate		
	XY Orientation	ASTM D638 40 MPa / 5800 psi
	Z Orientation	ASTM D638 30 MPa / 4400 psi
Tensile Modulus	ASTM D638	2700 MPa / 390 ksi
Elongation at Break		
	XY Orientation	ASTM D638 3.5 %
	Z Orientation	ASTM D638 2 %
Heat Deflection Temp. (1.82 MPa)	ASTM D648	106 °C
Sintered Part Density	ASTM D792	1.35 g/cc

SURFACE FINISH	TEST	RM ² 415-GF
Unfinished Part	ISO 4287	6.1 µm

ELECTRICAL PROPERTIES	TEST	RM ² 415-GF
Volume Resistivity (50% RH, 22 °C, 500V)	ASTM D257-93	2.0 Ex 10 ¹⁴ Ohm/cm

CHEMICAL RESISTANCE

Matrix in Polyamide 12 with a good chemical resistance to alkaline, hydrocarbons, oils, gasoline's, gas oil and solvents. Attack by the acids. Sealing of wall starting from 1.6 mm thickness.

Warranty/Disclaimer: Actual part properties may vary significantly from those listed above based on processing parameters, operating conditions, and material usage. Advanced Laser Materials, LLC makes no warranties of materials for any particular application, nor does it make a warranty of any type, expressed or implied, including, but not limited to, the warranties of merchantability for a particular purpose.

It's a custom industry, so why not expect custom results?

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