

FR-106

Fire Retarded Polyamide



Engineered Materials For Rapid Manufacturing

“A fire retarded polyamide composite designed to meet the high standards of FAR 25 while maintaining superior mechanical properties.”

- Meets rigorous Federal Aviation Regulations (FAR) fire retardant requirements.
- Superior toughness allows for thin walled features while saving space and weight in designs.
- Maintains exceptional mechanical strength.



Advanced Laser Material's FR-106 is a polyamide composite specifically engineered for producing parts with excellent fire retardancy while maintaining superior mechanical properties.

Parts manufactured from the FR-106 material exhibit high toughness and impact resistance. FR-106 parts can be manufactured to very low thicknesses, as low as 0.030", without compromising fire retardancy and toughness. This enables engineers and designers to decrease wall thicknesses, saving space and weight in their products. Even at these very low thicknesses, FR-106 parts easily pass challenging 60 second vertical burn testing as well as smoke and toxicity tests.

Every batch of FR-106 material is manufactured under high quality control standards. Detailed quality certificates are supplied with each shipment of FR-106 to certify conformance to the more rigorous production specifications typically encountered in rapid manufacturing applications.



FR-106 Data Sheet

MATERIAL PROPERTIES	TEST	FR-106
Density, Bulk	ASTM D 1895	0.55 g/cc
Particle Size		
	d90 Laser Diffraction	151 µm
	d50 Laser Diffraction	95 µm
	d10 Laser Diffraction	45 µm
Specific Gravity	ASTM D 792	1.07 g/cc
THERMAL PROPERTIES	TEST	FR-106
Melting Point	ASTM D 3418	186 °C
Melt Flow Rate (180 sec., 1.0 kg, 235 °C)	ASTM D 1238	9 ± 3 g/10 min
TYPICAL PART PROPERTIES	TEST	FR-106
Tensile Strength, Ultimate (XY)		
	XY Orientation ASTM D 638	46 MPa / 6700 psi
	Z Orientation ASTM D 638	39 MPa / 5600 psi
Tensile Strength, Yield		
	XY Orientation ASTM D 638	26 MPa / 3700 psi
	Z Orientation ASTM D 638	21 MPa / 3100 psi
Modulus of Elasticity	ASTM D 638	1,345 MPa / 195 ksi
Elongation at Break		
	XY Orientation ASTM D 638	38%
	Z Orientation ASTM D 638	21%
Flammability		
	12 Second Burn FAR 25.853	Pass
	60 Second Burn FAR 25.853	Pass
Smoke Density	FAR 25.853	Pass

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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