LASER SINTERING MATERIAL SPECIFICATIONS

AN EOS COMPANY

PEKK 100

PEKK

Unfilled PEKK combining high impact strength while maintaining high tensile strength.

HIGHLIGHTS

- High chemical resistance at high operating temperatures
- Replacement of injection moulded PA 6 GF (glass fiber filled Polyamide 6)
- High dielectric strength
- Material inherent flame retardancy (UL 94-V0)

APPLICATIONS

- Aerospace
- Mobility industry
- Industrial applications requiring high abrasion resistance and good sliding friction properties

HEADQUARTERS

ALM - Advanced Laser Materials

3115 Lucius McCelvey, Temple, TX 76504
P: 1.254.773.3080
FAX: 1.254.773.3084
E: info@advancedlasermaterials.com

AdvancedLaserMaterials.com

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TYPICAL PHYSICAL PROPERTIES			
PROPERTY	**TEST METHOD**	**IMPERIAL**	**METRIC**
Color/Appearance	Visual	Yellowish	Yellowish
Tensile Modulus X	ISO 527, Type 1A	580.150 ksi	4 GPa
Tensile Modulus Y	ISO 527, Type 1A	580.150 ksi	4 GPa
Tensile Modulus Z	ISO 527, Type 1A	565.646 ksi	3.9 GPa
Tensile Modulus X	ASTM D638	580.150 ksi	4 GPa
Tensile Modulus Y	ASTM D638	580.150 ksi	4 GPa
Tensile Modulus Z	ASTM D638	565.646 ksi	3.9 GPa
Tensile Strength X (UTS)	ISO 527, Type 1A	11.748 ksi	81 MPa
Tensile Strength Y (UTS)	ISO 527, Type 1A	11.748 ksi	81 MPa
Tensile Strength Z (UTS)	ISO 527, Type 1A	8.702 ksi	60 MPa
Tensile Strength X (UTS)	ASTM D638	11.748 ksi	81 MPa
Tensile Strength Y (UTS)	ASTM D638	11.748 ksi	81 MPa
Tensile Strength Z (UTS)	ASTM D638	8.702 ksi	60 MPa
Strain at Break X	ISO 527, Type 1A	2.3%	2.3%
Strain at Break Y	ISO 527, Type 1A	2.3%	2.3%
Strain at Break Z	ISO 527, Type 1A	1.6%	1.6%
Strain at Break X	ASTM D638	2.3%	2.3%
Strain at Break Y	ASTM D638	2.3%	2.3%
Strain at Break Z	ASTM D638	1.6%	1.6%
Sintered Part Density	ISO 1183-1	0.046 lb./in^3	1.29 g/cm^3
Charpy Impact Strength, 23°C Notched X	ISO 179-1/eA	-	2.7 kJ/m^2
Charpy Impact Strength, 23°C Notched Z	ISO 179-1/eA	-	1.7 kJ/m^2
Charpy Impact Strength, 23°C Unnotched X	ISO 179-1/eU	-	10.4 kJ/m^2
Charpy Impact Strength, 23°C Unnotched Z	ISO 179-1/eU	-	6.5 kJ/m^2
Melt Point	ASTM D3418	568 °F	298 °C
Melt Flow Rate	ASTM D1238	0.28 oz/10 min	8 grams/10 min
Izod Impact Unnotched XY	ASTM D256	3 ft-lbf/in	160 J/m
Izod Impact Unnotched Z	ASTM D256	1.92 ft-lbf/in	102 J/m
Izod Impact Notched XY	ASTM D256	1.01 ft-lbf/in	54 J/m
Izod Impact Notched Z	ASTM D256	0.25 ft-lbf/in	13 J/m

The material properties provided herein are for reference purposes only. Actual values may vary significantly as they are dramatically affected by part geometry and process parameters. Material specifications are subject to change without notice.

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TYPICAL PHYSICAL PROPERTIES			
THERMAL PROPERTIES	**DRY/CONDITIONED**	**UNIT**	**TEST STANDARD**
Burning Behavior, 1.5 mm nom. Thickness Thickness Tested	V-0, Test passed 1.5 mm	class mm	UL 94
Burning Behavior, 2.0 mm nom. Thickness Thickness Tested	V-0, Test passed 2.0 mm	class mm	UL 94

The material properties provided herein are for reference purposes only. Actual values may vary significantly as they are dramatically affected by part geometry and process parameters. Material specifications are subject to change without notice.

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