EOS Alumide®

Polyamide 12

EOS GmbH

Message:

Alumide is a metallic grey, aluminium-filled polyamide 12 powder, which is characterised by its high stiffness, metallic appearance and good postprocessing possibilities.
Laser-sintered parts made from Alumide possess excellent material properties:
excellent dimensional accuracy
well-balanced ratio of density and stiffness
increased thermal conductivity
good machinability
The surfaces of Alumide parts can be refined very easily by grinding, polishing or coating. The machining of Alumide laser-sintered parts is simplified through the cut breaking effect of the aluminium filling. A typical application for Alumide is the manufacture of stiff parts of metallic appearance for applications in automotive manufacture (e.g. wind tunnel tests or parts that are not safety-relevant), for tool inserts for injecting and moulding small production runs, for illustrative models (metallic appearance), for education and jig manufacture et al.

General Information			
Filler / Reinforcement	Aluminum		
Features	Filled Good Processability High Stiffness Metallized		
Uses	Automotive Applications Modeling Material Mold Making Molds/Dies/Tools Prototyping Tooling		
Appearance	Grey		
Forms	Powder		
Processing Method	3D Printing, Laser Sintering/Melting		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density	1.36	g/cm³	Internal Method
Hardness	**Nominal Value**	**Unit**	**Test Method**
Shore Hardness (Shore D, 15 sec)	76		ISO 868
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [1]	3800	MPa	ISO 527-2
Tensile Stress [2]	48.0	MPa	ISO 527-2
Tensile Strain [3] (Break)	4.0	%	ISO 527-2
Flexural Modulus [4] (23°C)	3600	MPa	ISO 178
Flexural Stress [5]	72.0	MPa	ISO 178

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength [6] (23°C)	4.6	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength [7] (23°C)	29	kJ/m²	ISO 179/1eU
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature [8]			
0.45 MPa, Unannealed	175	°C	ISO 75-2/B
1.8 MPa, Unannealed	144	°C	ISO 75-2/A
Vicat Softening Temperature	169	°C	ISO 306/B50
Melting Temperature [9]	176	°C	ISO 11357
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	5.0E+14	ohms	IEC 60093
Volume Resistivity [10]	3.0E+14	ohms·cm	IEC 60093
Electric Strength	0.10	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	13.0		
1 MHz	10.0		
Dissipation Factor (1 MHz)	0.018		IEC 60250
NOTE			
1.	X Direction		
2.	Y Direction		
3.	X Direction		
4.	X Direction		
5.	X Direction		
6.	X Direction		
7.	X Direction		
8.	X Direction		
9.	20°C/min		
10.	X Direction		

Recommended distributors for this material

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