EOS CarbonMide®

Polyamide 12

EOS GmbH

Message:

The anthracite black, carbon-fibre filled polyamide 12 material stands out for excellent stiffness and a maximised weight-strength-ratio. Laser-sintered parts made from CarbonMide possess excellent material properties:
extreme stiffness
excellent strength and hardness
light weight
electric conductivity
Due to the process related orientation of the fibres the mechanical properties varies in the three axis directions. Typical applications of the material are mechanically stressed parts which are optimised considering the self-weight of the part. Surface finished CarbonMide laser-sinter parts are suited for e.g. usage as aerodynamic components in motor sports application.

General Information			
Filler / Reinforcement	Carbon Fiber		
Features	Electrically Conductive Filled Good Strength High Hardness Ultra High Stiffness		
Uses	Automotive Applications Engineering Parts Metal Replacement Prototyping		
Appearance	Black		
Forms	Powder		
Processing Method	3D Printing, Laser Sintering/Melting		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density	1.04	g/cm³	Internal Method
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			ISO 527-2
-- [1]	6100	MPa	
-- [2]	3400	MPa	
-- [3]	2200	MPa	
Tensile Stress			ISO 527-2
-- [4]	25.0	MPa	
-- [5]	56.0	MPa	
-- [6]	72.0	MPa	
Tensile Strain			ISO 527-2
Break [7]	4.1	%	

Break [8]	6.3	%	
Break [9]	1.3	%	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
23°C [10]	2.1	kJ/m²	
23°C [11]	4.4	kJ/m²	
23°C [12]	5.3	kJ/m²	
Charpy Unnotched Impact Strength			ISO 179/1eU
23°C [13]	5.5	kJ/m²	
23°C [14]	28	kJ/m²	
23°C [15]	21	kJ/m²	
Thermal	Nominal Value	Unit	Test Method
Melting Temperature [16]	176	°C	ISO 11357
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity			IEC 60093
-- [17]	3.1E+2	ohms·cm	
-- [18]	11	ohms·cm	
-- [19]	4.6	ohms·cm	
NOTE			
1.	X Direction		
2.	Y Direction		
3.	Z Direction		
4.	Z Direction		
5.	Y Direction		
6.	X Direction		
7.	X Direction		
8.	Y Direction		
9.	Z Direction		
10.	Z Direction		
11.	Y Direction		
12.	X Direction		
13.	Z Direction		
14.	Y Direction		
15.	X Direction		
16.	20°C/min		
17.	Z Direction		
18.	Y Direction		
19.	X Direction		

Recommended distributors for this material

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