EOS PEEK HP3

Polyaryletherketone

EOS GmbH

Message:

EOS provides the world-first high-performance polymer for the laser-sintering process - EOS PEEK HP3. Belonging to the group of Polyaryletherketone (PAEK), this semi-crystalline, thermoplastic material was developed for the use on the new high-temperature system EOSINT P 800. The laser-sintered parts achieve a tensile strength up to 95 MPa and a Young's modulus up to 4400 MPa. These values are on an up to 100 percent higher level than the so far market dominating materials PA 12 and PA 11. The continuous use temperature ranges within 180 °C (mechanical dynamic), 240 °C (mechanical static) and 260 °C (electrical) depending on the field of application which could not be reached so far.

EOS PEEK HP3 is characterized by an outstanding combination of properties like:

excellent high temperature performance

high wear resistance

outstanding chemical resistance

best fire, smoke and toxicity performance

good hydrolysis resistance

potential biocompatibility

sterilisability

Due to this exceptional combination of properties EOS PEEK HP3 is optimally suited for highest demanding applications e.g. in medicine, aerospace industry or motorsports. In medical applications the outstanding properties make this material an ideal replacement for stainless steel and titanium. And in aerospace and in motorsports where light weight and fire resistance are of largest importance, EOS PEEK HP3 has developed to an adequate metal replacement.

General Information			
Features	Good Chemical Resistance		
	Good Sterilizability		
	Good Wear Resistance		
	High Heat Resistance		
	Hydrolytically Stable		
	Low Smoke Emission		
	Low Toxicity		
	Semi Crystalline		
Uses	Aerospace Applications		
	Automotive Applications		
	Engineering Parts		
	Medical/Healthcare Applications		
	Metal Replacement		
Appearance	Beige		
	Brown		
Processing Method	3D Printing, Laser Sintering/Melting		
Physical	Nominal Value	Unit	Test Method
Density	1.31	g/cm³	Internal Method
Mechanical	Nominal Value	Unit	Test Method

Tensile Modulus	4250	MPa	ISO 527-2
Tensile Stress	90.0	MPa	ISO 527-2
Tensile Strain (Break)	2.8	%	ISO 527-2
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (1.8 MPa,			
Unannealed)	165	°C	ISO 75-2/A
Melting Temperature ¹	372	°C	ISO 11357
NOTE			
1.	20°C/min		

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