ADDITIVE 3D
3D PRINTING

Impresión 3D
Escaneo 3D
Modelado 3D

PA 2200 Balance 1.0

PA12 EOS GmbH - Electro Optical Systems

Source: www.materialdatacenter.com

This whitish fine powder PA 2200 on the basis of polyamide 12 serves with its very well-balanced property profile a wide variety of applications.

Laser-sintered parts made from PA 2200 possess excellent material properties:
• high strength and stiffness
• good chemical resistance
• excellent long-term constant behaviour
• high selectivity and detail resolution
• various finishing possibilities (e.g. metallisation, stove enamelling, vibratory grinding, tub colouring, bonding, powder
coating, flocking)
• bio compatible according to EN ISO 10993-1 and USP/level VI/121 °C
• approved for food contact in compliance with the EU Plastics Directive 2002/72/EC (exception: high alcoholic foodstuff)
Typical applications of the material are fully functional plastic parts of highest quality. Due to the excellent mechanical properties the material is often used to substitute typical injection moulding plastics.
The biocompatibility allows its use e.g. for prostheses, the high abrasion resistance allows e.g. the realisation of movable part connections.
120 µm layer thickness
The advantage of the Balance parameter set is equilibrium. The layer thickness of 120 µm offers a perfect balance between production costs, mechanical properties, surface quality and accuracy. It is therefore suitable for parts with varying geometries, dimensions and requirements.

Mechanical properties	Value	Unit	Test Standard
Izod Impact notched (23°C)	**4.4**	kJ/m²	ISO 180/1A
Shore D hardness (15s)	**75**	-	ISO 868

3D Data	Value	Unit	Test Standard
Tensile Modulus			**ISO 527-1/-2**
X Direction	**1650**	MPa	
Y Direction	**1650**	MPa	
Z Direction	**1650**	MPa	
Tensile Strength			**ISO 527-1/-2**
X Direction	**48**	MPa	
Y Direction	**48**	MPa	
Z Direction	**42**	MPa	
Strain at break			**ISO 527-1/-2**
X Direction	**18**	%	
Y Direction	**18**	%	
Z Direction	**4**	%	

The properties of parts manufactured using additive manufacturing technology (e.g. laser sintering, stereolithography, Fused Deposition Modelling, 3D printing) are due to their layer-by-layer production, to some extent direction dependent. This has to be considered when designing the part and defining the build orientation.

3D Data	Value	Unit	Test Standard
(+23°C, X Direction)			
Charpy impact strength	**53**	kJ/m²	ISO 179/1eU
Charpy notched impact strength	**4.8**	kJ/m²	ISO 179/1Ea
Flexural Modulus	**1500**	MPa	ISO 178

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Thermal properties	Value	Unit	Test Standard
Melting temperature (20°C/min)	**176**	°C	ISO 11357-1/-3
Vicat softening temperature (50°C/h 50N)	**163**	°C	ISO 306
Burning behavior			UL 94
Test passed, HB	**0.5**	mm	
Test passed, HB	**1.6**	mm	
Test passed, HB	**3.2**	mm	

Other properties	Value	Unit	Test Standard
Density (lasersintered)	**930**	kg/m³	EOS Method
Powder colour (ac. to safety data sheet)	**White**	-	-

Characteristics

Processing : Laser Sintering, Rapid Prototyping
Chemical Resistance : General Chemical Resistance
Ecological valuation : FDA approval acc. to USP Biological test (classificationVI/121°C)

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