

Test Standard

PA 2210 FR PA12 FR

EOS GmbH - Electro Optical Systems

Unit

Product Texts

Product Texts Product information

PA 2210 FR is a polyamide 12 for processing in laser sintering systems with a halogen free, chemical flame retardant. In case of fire a carbonating coating arises on the surface of the part, isolating the plastic below.

Properties

- free of halogens
- higher stiffness compared to unfilled PA 12

Acceptance criteria

- JAR 25 (aviation)
- UL 94 (Electrical & Electronics)

Typical applications

- aviation (e.g. air ducts)
- plastic parts in devices and appliances (e.g. E&E housings)

3D Data

dry / cond 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.

Tensile Modulus			ISO 527-1/-2
X Direction	2500 / 2400	MPa	
Y Direction	2500 / 2400	MPa	
Z Direction	2300 / 2200	MPa	
Tensile Strength			ISO 527-1/-2
X Direction	46 / 43	MPa	
Y Direction	46 / 43	MPa	
Z Direction	41 / 38	MPa	
Strain at Tensile Strength			ISO 527-1/-2
X Direction	4 / 6	%	
Y Direction	4 / 6	%	
Z Direction	3 / 4	%	
Strain at break			ISO 527-1/-2
X Direction	4 / 7	%	
Y Direction	4 / 7	%	
Z Direction	3 / 4	%	
Flexural Modulus (23°C, X Direction)	2300 / -	MPa	ISO 178
Flexural Strength (X Direction)	65 / -	MPa	ISO 178

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (20°C/min)	185 / *	°C	ISO 11357-1/-3
Flammability			CS 25 / JAR25 / FAR
			25 § 25-853
Test passed, 12s Ignition Time	1.7	mm	2
Test passed, 12s Ignition Time	2.0	mm	
Smoke Density			ABD 0031 (Issue:F), method: AITM
			2.0007
Test passed	1.7	mm	
Test passed	2.0	mm	
Toxicity			ABD 0031 (Issue:F), method: AITM 3.0005
Test passed	1.7	mm	
Test passed	2.0	mm	

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The data correspond to our knowledge and experience at the time of publication. They do not on their own represent a sufficient basis for any part design, neither do they provide any agreement about or guarantee the specific properties of a product or part or the suitability of a product or part for a specific application. It is the responsibility of the producer or customer of a part to check its properties as well as its suitability for a particular purpose. This also applies regarding the consideration of possible intellectual property rights as well as laws and regulations. The data are subject to change without notice as part of EOS' continuous development and improvement processes.

Page: 1/2

UL 94

Burning behavior		
Test passed, HB	1.1	mm
Test passed, HB	1.2	mm
Test passed, HB	1.3	mm
Test passed, HB	1.4	mm
Test passed, HB	3.0	mm
Test passed, V-0	2.0	mm
Test passed, V-0	2.4	mm
Test passed, V-0	3.2	mm
Test passed, V-0	4.0	mm

Other properties	dry / cond	Unit	Test Standard
Density (lasersintered)	1060 / -	kg/m³	EOS Method
Powder colour (ac. to safety data sheet)	White	-	-
Colour of the components	White	-	-

Characteristics

Processing

3D Printing, Additive Manufacturing, Laser Sintering, Rapid Prototyping

Delivery form Powder

Special Characteristics

Flame retardant

Features

High Crystallinity, Thermal Stability, Homopolymer

Chemical Resistance

General Chemical Resistance, Grease Resistance, Oil Resistance

Applications

Aircraft and Aerospace, Electrical and Electronical

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