

**PA 2241 FR** PA12

EOS GmbH - Electro Optical Systems

# **Product Texts**

#### **Product Texts**

Product information

PA 2241 FR is a flame retardant polyamide 12 for processing in laser sintering systems. It contains a halogen-based flame retardant. Mainly due to its recyclability the material is economical, enabling low-cost part production.

# **Properties**

- flame retardant
- economic
- high strain at tensile strength

# Acceptance criteria

• JAR 25 (aviation)

#### Typical applications

• aviation (interior, e.g. air ducts and air outlet valves)

# **Product Information**

3D Data	dry / cond	Unit	Test Standard		
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	1900 / 1600	MPa			
Y Direction	1900 / 1600	MPa			
Z Direction	1900 / 1600	MPa			
Tensile Strength			ISO 527-1/-2		
X Direction	49 / 44	MPa			
Y Direction	49 / 44	MPa			
Z Direction	46 / 41	MPa			
Strain at Tensile Strength			ISO 527-1/-2		
X Direction	7 / 11	%			
Y Direction	7 / 11	%			
Z Direction	6 / 8	%			
Strain at break			ISO 527-1/-2		
X Direction	15 / 22	%			
Y Direction	15 / 22	%			
Z Direction	6 / 9	%			
Temp. of deflection under load			ISO 75-1/-2		
1.80 MPa, X Direction	84 / *	°C			
0.45 MPa, X Direction	154 / *	°C			

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (20°C/min)	185 / *	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.80 MPa	84 / *	°C	
0.45 MPa	154 / *	°C	
Flammability			CS 25 / JAR25 / FAR
			25 § 25-853
Test passed, 12s Ignition Time	1.0	mm	
Test passed, 12s Ignition Time	1.5	mm	
Test passed, 12s Ignition Time	2.0	mm	
Test passed, 60s Ignition Time	1.0	mm	
Test passed, 60s Ignition Time	1.5	mm	
Test passed, 60s Ignition Time	2.0	mm	

Last change: 2013-11-07 Source: www.materialdatacenter.com

Page: 1/2

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.

Smoke Density			ABD 0031 (Issue:F), method: AITM 2.0007
Test passed	1.0	mm	
Test passed	1.5	mm	
Test passed	2.0	mm	
Toxicity			ABD 0031 (Issue:F), method: AITM 3.0005
Test passed	1.0	mm	
Test passed	1.5	mm	
Test passed	2.0	mm	

Other properties	dry / cond	Unit	Test Standard
Density (lasersintered)	1000 / -	kg/m³	EOS Method
Bulk density	0.45	g/cm³	EN ISO 60
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

#### Feature

High Crystallinity, Thermal Stability, Homopolymer

#### **Chemical Resistance**

General Chemical Resistance, Grease Resistance, Oil Resistance

# Applications

Aircraft and Aerospace