

POLYMER SOLUTIONS

PA 2241 FR

Material Data Sheet

PA 2241 FR

Product Description

PA 2241 FR is a white polyamide 12 powder for processing in laser sintering systems, which contains a halogen-based flame retardant. Due to its refreshability the material is very cost-efficient compared to other flame-retardant materials on the market. The additively manufactured parts show good tensile strength and are suited to be used for aircraft interior applications, e.g., ventilation ducts and exhaust valves.

MAIN CHARACTERISTICS

- Flame-retardant
- Halogen-based flame retardant
- Refreshable

TYPICAL APPLICATIONS

- Aircraft interior parts, e.g., ventilation ducts, exhaust valves or brackets

| MECHANICAL PROPERTIES | DRY / CONDITIONED | UNIT | TEST STANDARD |
|-----------------------------------|-------------------|------|---------------|
| Tensile Modulus | | | ISO 527-1/-2 |
| X Orientation | 1900 / 1600 | MPa | |
| Y Orientation | 1900 / 1600 | MPa | |
| Z Orientation | 1900 / 1600 | MPa | |
| Tensile Strength | | | ISO 527-1/-2 |
| X Orientation | 49 / 44 | MPa | |
| Y Orientation | 49 / 44 | MPa | |
| Z Orientation | 46 / 41 | MPa | |
| Strain at Tensile Strength | | | ISO 527-1/-2 |
| X Orientation | 7 / 11 | % | |
| Y Orientation | 7 / 11 | % | |
| Z Orientation | 6 / 6 | % | |
| Strain at Break | | | ISO 527-1/-2 |
| X Orientation | 15 / 22 | % | |
| Y Orientation | 15 / 22 | % | |
| Z Orientation | 6 / 9 | % | |

| THERMAL PROPERTIES | DRY / CONDITIONED | UNIT | TEST STANDARD |
|--|----------------------|------|---|
| Melting Temperature | 185 | °C | ISO 11357-1/-3 |
| Temperature of Deflection under Load 1.80 MPa | | | ISO 75-1/-2 |
| X Orientation | 84 | °C | |
| Temperature of Deflection under Load 0.45 MPa | | | ISO 75-1/-2 |
| X Orientation | 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 | |
| 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 | VALUE | UNIT | TEST STANDARD |
|-------------------------|-------|-------------------|---------------|
| Density | 1.00 | g/cm ³ | EOS Method |
| Powder Color | white | - | - |
| Components Color | white | - | - |

HEADQUARTERS

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