PA12 Black V1 Powder Technical Data Sheet

Powder for high-strength, low warping, functional parts and small-batch end-use parts.

PA12 Black Powder is a general-purpose engineering-grade material with balanced properties, offering good mechanical strength, chemical resistance and dimensional stability. It is ideal for batch printing of industrial functional parts and end-use components, offering outstanding printing stability.

Benefits

- Exceptional dimensional accuracy and stability
- High strength with strong impact resistance
- Balanced mechanical properties
- Excellent print surface quality
- High reuse rate
- Easy to print

Applications

- Small-batch end-use parts
- Functional prototypes
- Jigs and fixtures
- Lightweight, structurally strong functional parts
- Industrial-grade connectors and housings
- Customized prosthetics, orthotics and other medical components

Mechanical Properties

Property	Testing Method	Typical Values (X-Direction)	Typical Values (Y-Direction)	Typical Values (Z-Direction)
Tensile Strength (MPa)	ISO 527-2	50	48	49
Elongation at Break (%)	ISO 527-2	9	7	6
Tensile Modulus (MPa)	ISO 527-2	1791	1783	1952
Flexural Strength (MPa)	ISO 178	70	/	/
Flexural Strain (%)	ISO 178	10	/	/
Flexural Modulus (MPa)	ISO 178	1483	/	/
Impact Strength / notched A (kJ/㎡)	ISO 179-2	4	4	4
Impact Strength / unnotched (kJ/㎡)	ISO 179-2	24	26	25
Shore Hardness D	ISO 868-2003	81	/	79

Thermal Properties

Property	Testing Method	Typical Values
Heat Deflection Temperature @0.45 MPa (°C)	ISO 75-2	127
Heat Deflection Temperature @1.8 MPa (°C)	ISO 75-2	51
Vicat Softening Temperature / A50 (°C)	ISO 306	174
Vicat Softening Temperature / B50 (°C)	ISO 306	147

Other Properties

Property	Testing Method	Typical Values
Powder Color	/	Black
Part Density (g/cm³)	ISO 1183.1-2004	1.024
Bulk Density (g/cm³)	ISO 60 / ASTM D1895	0.521