

PA NEXT GB Black V1 Powder Technical Data Sheet

Highly rigid, heat-resistant and stable powder suitable for precision structures and industrial applications.

PA NEXT GB powder is a glass bead-filled material that combines high rigidity with excellent dimensional stability, heat resistance, and deformation resistance. It is ideal for batch production of high-precision industrial parts, delivering fine surface quality.

Benefits

- High rigidity, suitable for parts requiring high structural strength
- Outstanding heat resistance and strong deformation resistance
- High wear resistance
- Excellent dimensional stability, ideal for high-precision assembly parts
- Low warping, compatible with complex structural designs
- Balanced mechanical properties

Applications

- High-stiffness structural parts: such as equipment housings, connection brackets, and structural frames
- Load-bearing jigs and tools: tooling, fixtures, and replacement parts under prolonged stress
- Heat-stress environment parts: such as engine compartment components and high-temperature moving parts
- Industrial end-use parts: industrial-grade structural supports and assembly connectors
- Electrical housings and functional mechanical components: durable casings and mechanical parts for medium- to low-volume custom manufacturing
- Molds and molding tools: suitable for medium-temperature rapid molding and simple injection molds

Mechanical Properties

Property	Testing Method	Typical Values (X-Direction)	Typical Values (Y-Direction)	Typical Values (Z-Direction)
Tensile Strength (MPa)	ISO 527-2	45	46	46
Elongation at Break (%)	ISO 527-2	4.5	4.5	4
Tensile Modulus (MPa)	ISO 527-2	2800	2800	2800
Flexural Strength (MPa)	ISO 178	67	67	58
Flexural Modulus (GPa)	ISO 178	2.1	2.1	2
Impact Strength / notched A (kJ/m ²)	ISO 179-2	3.3	3.4	3.2
Unnotched Charpy impact strength (kJ/m ²)	ISO 179-2	32	38	/
Shore Hardness D	ISO 868-2003	83.03	82.47	82.47

Disclaimer

The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End-use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc. Product specifications are subject to change without notice. Each user is responsible for determining the safety, lawfulness, technical suitability, and disposal/recycling practices of Raise3D materials for the intended application. Raise3D makes no warranty of any kind, unless announced separately, to the fitness for any particular use or application. Raise3D shall not be made liable for any damage, injury or loss induced from the use of Raise3D materials in any particular application.

Thermal Properties

Property	Testing Method	Typical Values (X-Direction)	Typical Values (Y-Direction)	Typical Values (Z-Direction)
Heat Deflection Temperature@0.45 MPa(°C)	ISO 75-2	144	144	144
Heat Deflection Temperature@1.8 MPa(°C)	ISO 75-2	114	114	115
VICAT Softening Temperature/10N(°C)	ISO 306	170.8	170.1	170.1
VICAT Softening Temperature/50N(°C)	ISO 306	162.4	162.7	162.7

Other Properties

Property	Testing Method	Typical Values
Powder Color	/	Black
Density (g/cm ³)	ISO 1183.1-2004	1.35
Powder Bed Density (g/cm ³)	/	0.83
Bulk Density (g/cm ³)	GB/T 16913.3-1997	0.76

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