



## PA12 GB Black V1 Powder Technical Data Sheet

High rigidity, excellent dimensional stability and heat resistance

PA12 GB is a high-performance composite material based on high-quality PA12, modified and reinforced with a certain proportion of high-purity glass beads.

Thanks to the uniform dispersion technology of glass beads, PA12 GB not only retains its basic toughness and good processing fluidity, but also improves the rigidity, heat resistance and dimensional stability of the material, enabling it to meet the requirements of industrial functional components and structural parts.

### Benefits

- High rigidity
- Good heat resistance

- Good dimensional stability
- Low warpage rate

### Applications

- High-stiffness structural components: connecting brackets, structural frames
- Tools and inspection instruments: load-bearing tooling, jigs, replacement parts
- Housings and protective components: consumer electronics housings, industrial controller housings

- Actuators and connectors: robot end effectors, robot arm shells
- Parts for thermal stress environments: engine compartment components, high-temperature moving parts

## Mechanical Properties

Property	Testing Method	Typical Values (X-Direction)	Typical Values (Y-Direction)	Typical Values (Z-Direction)
Tensile Strength (MPa)	ISO 527-2	49	49	48
Elongation at Break (%)	ISO 527-2	4.5	4.5	3
Tensile Modulus (MPa)	ISO 527-2	2800	2800	2800
Flexural Strength (MPa)	ISO 178	64	64	57
Flexural Modulus (MPa)	ISO 178	2100	2100	2000
Impact Strength / notched A (kJ/m <sup>2</sup> )	ISO 179-2	/	/	/
Impact Strength / unnotched (kJ/m <sup>2</sup> )	ISO 179-2	/	/	/
Shore Hardness D	ISO 868-2003	83	82.5	82

## 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	173.2	172.6	172.6
Heat Deflection Temperature@1.8 MPa(°C)	ISO 75-2	165.3	165.5	165.5
VICAT Softening Temperature/10N(°C)	ISO 306	170.8	171	171
VICAT Softening Temperature/50N(°C)	ISO 306	52	154.4	154.4

## Other Properties

Property	Testing Method	Typical Values
Powder Color	/	Black
Density (g/cm <sup>3</sup> )	ISO 1183.1-2004	1.18
Powder Bed Density (g/cm <sup>3</sup> )	/	0.56
Bulk Density (g/cm <sup>3</sup> )	ISO 60/ ASTM D1895/ GB-T 5162	0.65

### Disclaimer

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