

VALUE

PA 12 GLASS BEADS

FABULOUS
MATERIALS

VALUE is a fine composite powder based on polyamide 12 (thermoplastic) especially formulated to function on powder bed systems by laser sintering (SLS, LS). It enables to obtain productions of models and functional parts in "plastic engineering" with long cycle of life and excellent chemical resistance.

VALUE

PA 12 GB

Typical features :

Composite Polyamide 12
Glass beads charged PA.
Excellent surface quality and
dimensional accuracy and resolution
Good value for money
Easy to process

Applications examples :

- Mechanical parts
- Details features
- Fuel or oil tanks
- Large parts
- Automotive
- Air box

Refresh rate :

50 %
IN CONTINUOUS CYCLES

The process ability of the powder on your systems is optimized ; thus all the powder of a building can be re-used after sifting.

Key Points :

Fine resolution
46 µm
Excellent Resolution
= Less Finishing
Reduce warpage

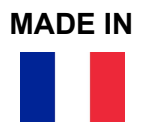
General Properties :

Chemical Nature of the Preparation :	POLYAMIDE 12 charged with Glass Beads, Presence of additives	
Physical State (20°C) and Color :	Charged grade = VALUE Solid (powder) Natural Grade : Light Grey	
Average Particle Size : Grain Size : Grain Size : Grain Size :	Diffraction laser : D10 D50 D90	45 < _ < 65 µm 35 µm 60 µm 75 µm
Powder packed Density 23 ° C : Part Density : 23°C Moisture absorption 24 hrs :	Method FABULOUS : Method FABULOUS : ASTM D570	1,05 +/- 0,05 g/cm ³ 1,38 +/- 0,05 g/cm ³ 0,50 +/- 0,05 %

Mechanical Properties :

Young Modulus* Flexural Modulus* Tensile strength (Average XY)* Tensile strength (Average Z)* Elongation at break (Average XY)* Elongation at break (Average Z)* Charpy – Impact strength* *statistics after several cycles	ISO 527 ISO 178 ISO 527 ISO 527 ISO 527 ISO 527 ISO 179 (20°C)	3100 - 3300 MPa 3000 MPa (estimate) 35 +/- 3 MPa (estimate) 30 +/- 3 MPa (estimate) 12 % (estimate) 8 % (estimate) NC 50 cond. 24 hrs
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The mechanical properties can vary according to the positioning of the tensile bars, operating conditions and exposure parameters of the systems used. These data rest on the current state of our knowledge. They do not give the exact characteristics of material and does not represent a guarantee.



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Thermal Properties :

T°f Melting Point :	DSC	180 <_ < 186 °C
T° Process : According to machine Reading :	Glazing Method	-14 +/- 2 °C (ex : 174 °C +/-2)
Flammability – Fire Classification UL-94 following ASTM D618(ISO 921) with a barrel 125 x 13 x 13 mm	UL94 vertical & Horizontal test	Charged grade: HC Out Classification

Electrical Properties :

According to the value reach in CEI 93 the material is considered as : **ANTISTATIC**

Volume resistivity	CEI 93	Estimate < 1 E+11 Ohms/m
Horizontal surface Voluminal resistivity	CEI 93	Estimate < 1 E+10 Ohms
Vertical surface Voluminal resistivity	CEI 93	Estimate < 1 E+10 Ohms

Surface Finish :

Natural Coloration :	Visual	Light Grey
Shore D Hardness :	ISO 868 (20°C)	Estimate > 80 Shore D
Surface Ra/ Upper Facing processed & blasting :	ISO 4287	Estimate > 8 +/- 1 µm
Surface Ra/ Upper Facing after Finishing :	ISO 4287	Estimate > 5 +/- 1 µm

Chemical Properties :

Matrix in Polyamide 12 with a good chemical resistance to alkaline, hydrocarbons, oils, gasoline's, gas oil and solvents.
Attack by the acids. Sealing of wall starting from **1.8 mm thickness**.

SOLUBILITY : WATER :	Insoluble in Water (20 °C) < 1 mg/m3 (estimated)
Solvents :	Soluble in :Mineral acids, Phenols Insoluble in most organic solvents Insoluble in : Chlorinated solvents ,Alkaline conditions Charge: Insoluble in almost all chemicals, except hydrofluoric acid
Odor :	Slight
pH:	3 - 7,5 (aqueous suspension)
Melting Point / Range :	130 ° C < T < 220 °C
Decomposition Temperature :	> 400 °C
Explosive Properties :	Dust may form explosive mixture in air (30 - 60 g/m³) Test of dust behavior in explosions : Kst = 200 - 250 m.bar/sPURE / 301 m.bar/s Explosibility class : St2 PURE Standard : ISO 6184/1 - ASTM E 1226
Explosive Limits :	Lower : in air 30 - 60 g/m3 Higher : In air Approximately 200 g/m3 (estimated)

Data Sheet _VALUE PA 12GB_ Dec 2020.