VALUE
PA 12 GLASS BEADS

FABULOUS MATERIALS

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

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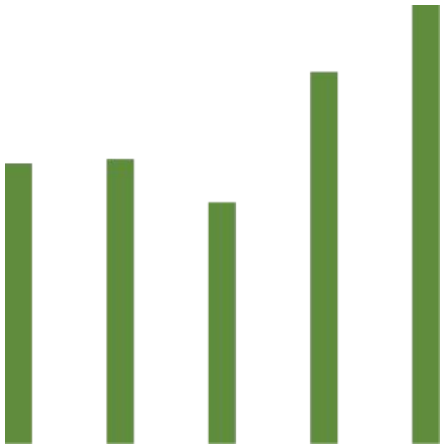

Typical features :

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

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General Properties :

Chemical Nature of the Preparation :	POLYAMIDE 12 charged with Glass Beads, Presence of additives Charged grade = VALUE	
Physical State (20°C) and Color :	**Solid (powder) Natural Grade : Light Grey**	
Average Particle Size :	**Diffraction laser :**	**45 < _ < 65 µm**
Grain Size :	D10	35 µm
Grain Size :	D50	60 µm
Grain Size :	D90	75 µm
Powder packed Density 23 ° C :	**Method FABULOUS :**	**1 ,05 +/- 0,05 g/cm³**
Part Density :	**Method FABULOUS :**	**1,38 +/- 0,05 g/cm³**
23°C Moisture absorption 24 hrs :	ASTM D570	0,50 +/- 0,05 %

Mechanical Properties :

Young Modulus*	**ISO 527**	**3100 - 3300 MPa**
Flexural Modulus*	ISO 178	3000 MPa (estimate)
Tensile strength (Average XY)*	**ISO 527**	**35 +/- 3 MPa** (estimate)
Tensile strength (Average Z)*	ISO 527	30 +/- 3 MPa (estimate)
Elongation at break (Average XY)*	**ISO 527**	**12 %** (estimate)
Elongation at break (Average Z)*	ISO 527	8 % (estimate)
Charpy – Impact strength*	**ISO 179 (20°C)**	**NC**
**statistics after several cycles*		*50 cond. 24 hrs*

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 : T° Process : According to machine Reading :	**DSC** Glazing Method	**180 < _ < 186 °C** -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 Horizontal surface Voluminal resistivity Vertical surface Voluminal resistivity	**CEI 93** **CEI 93** **CEI 93**	**Estimate < 1 E+11** Ohms/m **Estimate < 1 E+10** Ohms **Estimate < 1 E+10** Ohms

Surface Finish :

Natural Coloration : **Shore D Hardness :** Surface Ra/ Upper Facing processed & blasting : Surface Ra/ Upper Facing after Finishing :	**Visual** **ISO 868 (20°C)** ISO 4287 ISO 4287	**Light Grey** **Estimate > 80 Shore D** **Estimate >** 8 +/- 1 µm **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 : Solvents : Odor : pH:	Insoluble in Water (20 °C) < 1 mg/m3 (estimated) 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 Slight 3 - 7,5 (aqueous suspension)
Melting Point / Range : Decomposition Temperature : Explosive Properties : Explosive Limits :	130 ° C < T < 220 °C > 400 °C 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 Lower : in air **30 - 60 g/m3** Higher : In air Approximately 200 g/m3 (estimated)

Data Sheet _VALUE PA 12GB_ Dec 2020.