

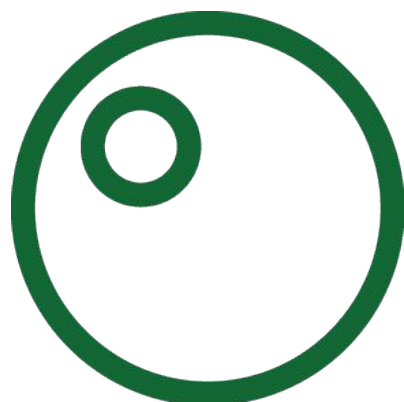


PURE
PA 12

FABULOUS
MATERIALS

PURE is a fine 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.

PURE
PA 12



Typical features :

Real Polyamide 12

Fine granulometry
Excellent surface finishing
Low porosity
UV stable
Excellent operating costs

Applications examples :

- Small series
- Luxury
- Formula 1
- Automotive
- Detailing parts

Refresh rate :

25 %

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.
The refreshing factor for regeneration is lower than the usual rates giving a real economic advantage.

Key Points :

Fine resolution
42 μm

Excellent Resolution =
Less Finishing



MADE IN



General Properties :

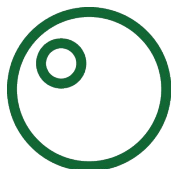
Chemical Nature of the Preparation :	POLYAMIDE 12, Presence of additives	
Physical State (20°C) and Color :	Natural grade = PURE Solid (powder) Natural Grade : White cream	
Average Particle Size : Grain Size : Grain Size : Grain Size :	Diffraction laser : D10 D50 D90	35 <_ < 45 μm 30 μm 40 μm 55 μm
Powder packed Density 23 ° C : Part Density : 23°C Moisture absorption 24 hrs :	Method FABULOUS : Method FABULOUS : ASTM D570	0,50 +/- 0,05 g/cm ³ 0,98 +/- 0,05 g/cm ³ 0,50 +/- 0,05 %

Mechanical Properties :

Young Modulus*	ISO 527	1450 - 1750 MPa
Flexural Modulus*	ISO 178	1300 - 1400 MPa
Tensile strength (Average XY)*	ISO 527	45 +/- 3 MPa
Tensile strength (Average Z)*	ISO 527	40 +/- 3 MPa
Elongation at break (Average XY)*	ISO 527	14 +/- 5 %
Elongation at break (Average Z)*	ISO 527	9 +/- 3 %
Charpy – Impact strength*	ISO 179 (20°C)	80 dry / *2 KJ/m ²
<i>*statistics after several cycles > 10 refresh</i>		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.





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	Natural grade: HC Out Classification

Electrical Properties :

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

Volume resistivity	CEI 93	1.2 E+13 Ohms/m
Horizontal surface Voluminal resistivity	CEI 93	1.4 E+15 Ohms
Vertical surface Voluminal resistivity	CEI 93	1.7 E+15 Ohms

Surface Finish :

Natural Coloration :	Visual	White cream
Shore D Hardness :	ISO 868 (20°C)	80 Shore D
Surface Ra/ Upper Facing processed & blasting :	ISO 4287	9 +/- 1 µm
Surface Ra/ Upper Facing after Finishing :	ISO 4287	2 +/- 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 **1.4 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
Odor :	Slight
pH:	3 - 7,5 (aqueous suspension)
Melting Point / Range : Decomposition Temperature : Explosive Properties :	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/s PURE/ 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 _PURE PA 12_ Dec 2020.