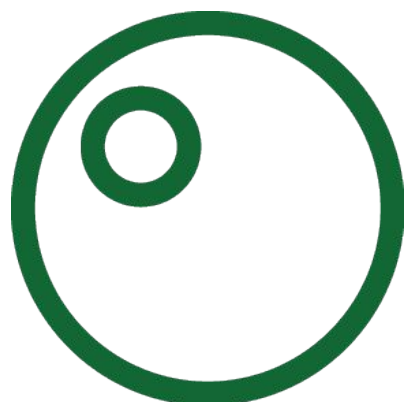


**PURE**  
PA 12

**FABULOUS**  
MATERIALS

PURE is a fine powder based on polyamide 12 (thermoplastic) especially formulated to function on powder bed 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 :**

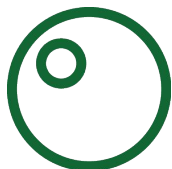
<b>Chemical Nature of the Preparation :</b>	POLYAMIDE 12, Presence of additives	
<b>Physical State (20°C) and Color :</b>	Natural grade = PURE Solid (powder) Natural Grade : White cream	
<b>Average Particle Size :</b> Grain Size : Grain Size : Grain Size :	<b>Diffraction laser :</b> D10 D50 D90	35 <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

**Mechanical Properties :**

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

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

### Electrical Properties :

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

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

### Surface Finish :

<b>Natural Coloration :</b>	<b>Visual</b>	<b>White cream</b>
<b>Shore D Hardness :</b>	<b>ISO 868 (20°C)</b>	<b>80 Shore D</b>
<b>Surface Ra/ Upper Facing processed &amp; blasting :</b>	<b>ISO 4287</b>	<b>9 +/- 1 µm</b>
<b>Surface Ra/ Upper Facing after Finishing :</b>	<b>ISO 4287</b>	<b>2 +/- 1 µm</b>

### 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**.

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

Data Sheet \_PURE PA 12\_ Dec 2020.