


PURE is a fine 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.

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|  <p>PA12</p> | <p>Typical features :</p> <ul style="list-style-type: none"> ● Real Polyamide 12 ● Fine granulometry (42 µm) ● Excellent surface finishing | <p>Applications examples :</p> <ul style="list-style-type: none"> ➔ Small series ➔ Luxury ➔ Formula 1 ➔ Automotive ➔ Detailing parts |
| | <p>Refresh rate :</p> <p>33 to 50 %</p> <p><i>Recommended</i></p> | <p>Key Points :</p> <ul style="list-style-type: none"> ● Fine resolution ● Low porosity ● UV stable ● Excellent operating costs |



MADE IN



General Properties :

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| <p>Chemical Nature of the Preparation :</p> <p>Physical State (20°C) and Color :</p> | <p>POLYAMIDE 12, Presence of additives Natural grade = PURE Solid (powder) Natural Grade : White cream</p> | |
| <p>Average Particle Size : Grain Size : Grain Size : Grain Size :</p> <p>Powder packed Density 23 ° C : Part Density : 23°C Moisture absorption 24 hrs :</p> | <p>Diffraction laser : D10 D50 D90</p> <p>Method FABULOUS : Method FABULOUS : ASTM D570</p> | <p>35 <_ < 45 µm 30 µm 40 µm 55 µm</p> <p>0,50 +/- 0,05 g/cm³ 0,98 +/- 0,05 g/cm³ 0,50 +/- 0,05 %</p> |

Mechanical Properties :

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| <p>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* <i>*statistics after several cycles > 10 refresh</i></p> | <p>ISO 527 ISO 178 ISO 527 ISO 527 ISO 527 ISO 527 ISO 179 (20°C)</p> | <p>1450 - 1750 MPa 1300 - 1400 MPa 45 +/- 3 MPa 40 +/- 3 MPa 14 +/- 5 % 9 +/- 3 % 80 dry / *2 KJ/m² 50 cond. 24 hrs</p> |
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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.

Thermal Properties :

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| 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

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| 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 :

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| 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.

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| 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 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/s PURE/ 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 _PURE PA 12_ Dec 2022.