

CARE is a fine powder based on polyamide 11 (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.



PA11 white Natural

Typical features :

- **PA11 Natural 100%**
- **Better elasticity than PA12**
- **Sustainable material (bio-sourced)**
- **High mechanical performances**

Applications examples :

- ➔ **Mechanical parts**
- ➔ **Medical & dental**
- ➔ **Industries requesting ductility & shock absorption**

Refresh rate :

**40 to 50 %
recommended**

Key Points :

- **For industrial sls 3d printers**
- **High mechanical performances : ductility, elongation shock resistance**



MADE IN



General Properties :

Chemical Nature of the Preparation :	POLYAMIDE 11, Presence of additives	
Physical State (20°C) and Color :	Natural grade = CARE Solid (powder) Natural Grade : white cream	
Average Particle Size : Grain Size : Grain Size : Grain Size :	Diffraction laser : D10 D50 D90	45 < _ < 60 µm 35 µm 45 µm 70 µm
Powder packed Density 23 ° C : Part Density : 23°C Moisture absorption 24 hrs :	Method FABULOUS : Method FABULOUS : ASTDM D570	0,55 +/- 0,05 g/cm³ 1 +/- 0,05 g/cm³ 1,12 +/- 0,05 %

Mechanical Properties :

Young Modulus*	ISO 527	> 1500 MPa
Flexural Modulus*	ISO 178	> 1300 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	40 +/- 5 %
Elongation at break (Average Z)*	ISO 527	20 +/- 3 %
Charpy – Impact strength*	ISO 179 (20°C)	NO BREAK dry/Cond.24 hrs KJ/m²
<i>*statistics after several cycles.</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 : T° Process : According to machine Reading :	DSC Glazing Method	196 < _ < 204 °C - 12 +/- 2 °C (ex : 186 °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 Horizontal surface Voluminal resistivity Vertical surface Voluminal resistivity	CEI 93 CEI 93 CEI 93	1.3 E+13 Ohms/m 1.2 E+15 Ohms 1.5 E+15 Ohms
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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	White cream 80 +/- 2 Shore D 10 +/- 2 µm 6 +/- 1 µm
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Chemical Properties :

Matrix in Polyamide 11 with a good chemical resistance to alkaline, hydrocarbons, oils, gasoline's, gas oil and solvents.
Attack by the acids. Sealing of wall starting from **1.6 mm thickness**.

SOLUBILITY : WATER : Solvents : Odor : pH:	Insoluble in Water on the basis of its structure at 20 °C < 1 mg/m3 (estimated) Soluble in :Mineral acids, Phenols Insoluble in most organic solvents Insoluble in : Chlorinated solvents, Alkaline conditions None NA
Melting Point / Range : Decomposition Temperature : Explosive Properties : Explosive Limits :	> 180 °C Polymer: > 350 °C Dust may form explosive mixture in air (30 - 60 g/m3) Test of dust behavior in explosions : Kst = 200 - 250 m.bar/s CARE / 301 m.bar/s Explosibility class : St2 CARE. Standard : ISO 6184/1 - ASTM E 1226 Lower : in air 30 - 60 g/m3 Higher : In air Approximately 200 g/m3 (estimated)

Data Sheet_CARE PA11_ Dec 2023.