

DETECT

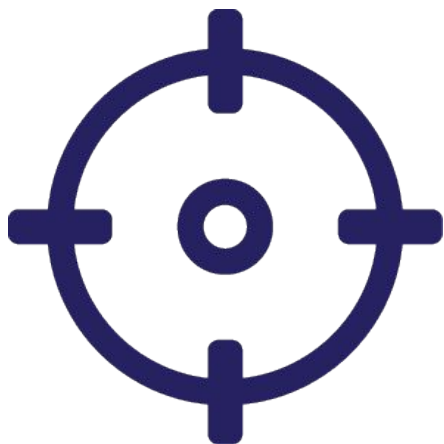
PA 11

FABULOUS
MATERIALS

DETECT is a fine composite powder based on polyamide 11 (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 for the food industry with long cycle of life and excellent chemical resistance.

DETECT

PA 11



Typical features :

Metal Detection
Bio-sourcing (Castor oil)
X-RAY
Magnetizable

Applications examples :

- Food industry
- Safety equipments
- BLUE color parts
- PA 11 based parts
- Metal detectable

Refresh rate :

50%

limited to 6-10 cycles

Standard process ability of the powder on your systems
* measured on non-finish surface
** Depending on the laser sintering level and cycles.

Key Points :

**Magnetic &
X-ray
detectability
+.
Magnetizable**



MADE IN



General Properties :

Chemical Nature of the Preparation :

COMPOSITE POLYAMIDE 11 formulation . Presence of additives and charge grade = DETECT

Physical State (20°C) and Color :

Solid (powder) : Blue coloration in mass.

Average Particle Size :

Grain Size :
Grain Size :
Grain Size :

Diffraction laser :

D10
D50
D90

45 < _ < 65 µm

Powder packed Density 23 ° C :

Part Density :

23°C Moisture absorption 24 hrs :

Method FABULOUS :

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ASTM D570

< 0,6 +/- 0,05 g/cm³ (estimate)

< 1,1 +/- 0,05 g/cm³ (estimate)

> 1,12 +/- 0,05 % (estimate)

Mechanical Properties :

Young Modulus*

ISO 527

1800 MPa

Flexural Modulus*

ISO 178

> 1500 MPa

Tensile strength (Average XY)*

ISO 527

38 +/- 4 MPa

Tensile strength (Average Z)*

ISO 527

30 +/- 3 MPa

Elongation at break (Average XY)*

ISO 527

7,5 +/- 1,5 %

Elongation at break (Average Z)*

ISO 527

> 4 +/- 1 %

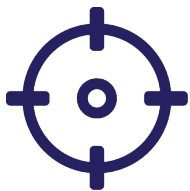
Charpy – Impact strength*

ISO 179 (20°C)

N/C

*statistics after several cycles

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	190 < _ < 202 °C - 14 +/- 2 °C (ex : 183 °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	NC NC

Electrical Properties :

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

Volume resistivity	CEI 93	NC Ohms/m
Horizontal surface Voluminal resistivity	CEI 93	NC Ohms
Vertical surface Voluminal resistivity	CEI 93	NC 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	NAVY Blue in mass NC 12 +/- 4 µm 6 +/- 2 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 2 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_DETECT PA11_ Oct 2021.