




DETECT is a fine composite 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 for the food industry with long cycle of life and excellent mechanical properties

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|    | <p>Typical features :</p> <ul style="list-style-type: none"> ● PA11 Blue in the mass ● Metal detectable ● Food-contact compliant : EU N° 10/2011 + FDA CFR 21 ● GMP compliant | <p>Applications examples :</p> <ul style="list-style-type: none"> ➔ Food industry ➔ Pharma industry ➔ Medical instrumentations ➔ Packaging industry ➔ Safety equipments |
| | <p>Refresh rate :</p> <h1>50%</h1> <p>limited to 8 cycles</p> | <p>Key Points :</p> <ul style="list-style-type: none"> ● Safe for Food use ● Navy Blue for optical detection ● Magnetic & X-ray detectable ● Magnetizable ● Bio-sourced components ● High mechanical properties |



MADE IN



General Properties :

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| <p>Chemical Nature of the Preparation :</p> <p>Physical State (20°C) and Color :</p> | <p>COMPOSITE POLYAMIDE 11 formulation . Presence of additives and charge grade = DETECT</p> <p>Solid (powder) : Blue coloration in mass.</p> | |
| <p>Average Particle Size :</p> <p>Grain Size :</p> <p>Grain Size :</p> <p>Grain Size :</p> <p>Powder packed Density 23 ° C :</p> <p>Part Density :</p> <p>23°C Moisture absorption 24 hrs :</p> | <p>Diffraction laser :</p> <p>D10</p> <p>D50</p> <p>D90</p> <p>Method FABULOUS :</p> <p>Method FABULOUS :</p> <p>ASTM D570</p> | <p>45 < _ < 65 μm</p> <p>–</p> <p>–</p> <p>–</p> <p>< 0,6 +/- 0,05 g/cm³ (estimate)</p> <p>< 1,1 +/- 0,05 g/cm³ (estimate)</p> <p>> 1,12 +/- 0,05 % (estimate)</p> |

Mechanical Properties :

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| <p>Young Modulus*</p> <p>Flexural Modulus*</p> <p>Tensile strength (Average XY)*</p> <p>Tensile strength (Average Z)*</p> <p>Elongation at break (Average XY)*</p> <p>Elongation at break (Average Z)*</p> <p>Charpy – Impact strength*</p> <p>*statistics after several cycles</p> | <p>ISO 527</p> <p>ISO 178</p> <p>ISO 527</p> <p>ISO 527</p> <p>ISO 527</p> <p>ISO 527</p> <p>ISO 179 (20°C)</p> | <p>1800 MPa</p> <p>> 1500 MPa</p> <p>38 +/- 4 MPa</p> <p>30 +/- 3 MPa</p> <p>7,5 +/- 1,5 %</p> <p>> 4 +/- 1 %</p> <p>N/C</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 | 190 < _ < 202 °C |
| T° Process : According to machine Reading : | Glazing Method | - 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

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| 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 :

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|---|----------------|-------------------|
| Natural Coloration : | Visual | NAVY Blue in mass |
| Shore D Hardness : | ISO 868 (20°C) | NC |
| Surface Ra/ Upper Facing processed & blasting : | ISO 4287 | 12 +/- 4 µm |
| Surface Ra/ Upper Facing after Finishing : | ISO 4287 | 6 +/- 2 µm |

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.

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| 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_ Dec 2022