Technical datasheet
PA Blue Metal Detectable

colorFabb

Date of issue: November 20th, 2023
Version: v2.0

Description

The colorFabb PA Blue Metal Detectable is a 3D printing filament infused with metal detectable particles. The typical blue color and the metal particles, make printed objects readily detectable in various situations.

Disclaimer: Please be advised that the metal particles integrated into our product are designed for detection by specialized metal detection equipment used in the food industry. Standard household magnets or basic metal detectors may not reliably detect these particles. Our materials are optimized for advanced metal detection systems like electromagnetic induction and X-ray inspection. **For accurate detection, we recommend using appropriate equipment designed for the food processing environment and increasing the infill for the 3D printed object to increase the particle content.**

Typical Properties

Mechanical Properties – 3D Printed

	Method	*Value*	*Unit*
Youngs Modulus	Tensile, ISO 527-1A	3100	MPa
Tensile Strength	Tensile, ISO 527-1A	65	MPa
Elongation at break	Tensile, ISO 527-1A	4.5	%
Flexural Modulus	Flexural, ISO 178	N/A	MPa
Flexural Strength	Flexural, ISO 178	N/A	MPa
Impact Strength	Charpy Notch, ISO 179	3.1	kJ/m^2

Mechanical Properties – Injection Molded*

	Method	*Value*	*Unit*
Youngs Modulus	Tensile, ISO 527-1A	3800	MPa
Tensile Strength	Tensile, ISO 527-1A	85	MPa
Elongation at break	Tensile, ISO 527-1A	4	%
Flexural Modulus	Flexural, ISO 178	N/A	MPa
Flexural Strength	Flexural, ISO 178	N/A	MPa
Charpy Impact Strength	Charpy Unnotched, ISO 179	81	kJ/m^2
Density	ISO 1183	1.25	g/cm^3

Thermal Properties*

	Method	*Value*	*Unit*
Glass Transition Temp.	DSC, ISO 11357	N/A	˚C
Melting Temp.	DSC, ISO 11357	N/A	˚C
Decomposition Temp.	TGA, ISO 11358	N/A	˚C
Heat Deflection Temp.	HDT-B, ISO 75	90	˚C
Melt Flow Index	MFI, (250˚C/2.16 kg), ISO 1133-A	6	g/10min

*These results are obtained from the information provided by the supplier of the raw material

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Filament Specifications

	Unit		
Diameter	mm	1.75	2.85
Max. roundness deviation	mm	± 0.05	± 0.1
Net. Filament weight	g	750	750

Guideline for print settings

	Unit	
Nozzle Temp.	˚C	265-290
Bed Temp.	˚C	Ambient-50
Bed / surface modification	-	-
Active cooling fan	%	0-50**
Print Speed	mm/s	30-40

Notes

The reported properties are an average of a batch of 3D specimens.
The specimens have been printed in XY plane, using … mm layer height, 100% infill, 0,4 mm nozzle, …. ˚C nozzle temperature and …˚C bed temperature.

** The fan speed is advised to be altered depending on the desired end finish. A fan speed of 0% is advised to achieve the best layer-to-layer adhesion. In a geometry needs cooling, a maximum of 50% regular fan speed is advised,

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