

# Technical Data Sheet

## Ultrasint PA6 MF X036

### Components

Mineral filled BASF Polyamide 6-based powder for Laser Sintering

### Product Description

All Ultrasint PA6 grades have in common that they show high modulus, high strength and excellent thermal distortion stability. These properties ensure precise feature control, very good mechanical properties and simple surface reprocessing of 3D printed parts.

Ultrasint PA6 MF X036 contains a mineral reinforcement. In contrast to simple dry blends, the reinforcement is embedded within the particles, leading to improved powder homogeneity, better spreading and easier recycling.

Tensile and flexural modulus, as well as impact strength are significantly higher compared to unfilled material. Ultrasint PA6 MF X036 therefore lends itself for applications where high stiffness and higher strength are the most important requirements, while not sacrificing other properties of the unfilled material – a material suitable for parts with demanding mechanical property combinations.

### Delivery form and warehousing

Ultrasint PA6 MF X036 powder should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the product will have a minimum shelf life of 12 months.

### Product safety

Mandatory and recommended industrial hygiene procedures and the relevant industrial safety precautions must be followed whenever this product is being handled and processed. Product is sensitive to humid environment conditions. For additional information please consult the corresponding material safety data sheets.

### For your information

Ultrasint PA6 MF X036 comes in natural grey color. Electrical properties (e.g. volume resistivity, surface resistivity), chemical properties (e.g. resistance against particular substances) and tolerance for solvents are available upon request. Generally, these properties correspond to publicly available data on polyamides.

### Notice

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

The safety data given in this publication is for information purposes only and does not constitute a legally binding Material Safety Data Sheet (MSDS). The relevant MSDS can be obtained upon request from your supplier or you may contact BASF directly at [3d-printing@basf.com](mailto:3d-printing@basf.com).

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General Properties	Test method	Typical values	
Bulk Density	ISO 696	630 kg/m <sup>3</sup> / 39.3 lb/ft <sup>3</sup>	
Printed Part Density	ISO 1183-1	1440 kg/m <sup>3</sup> / 90 lb/ft <sup>3</sup>	
Particle Size Distribution	Laser Diffraction		
D10		44 µm	
D50		72 µm	
D90		116 µm	
Mechanical Properties <sup>1)</sup>	Test method	Typical values x-direction	Typical values z-direction
Tensile Strength	ISO 527-2	86 MPa / 12.5 ksi	74 MPa / 10.7 ksi
Tensile Modulus	ISO 527-2	6400 MPa / 928 ksi	5850 MPa / 848 ksi
Tensile Elongation @ break	ISO 527-2	2.5%	1.7%
Flexural Strength	ISO 178	131 MPa / 19 ksi	108 MPa / 15.7 ksi
Flexural Modulus	ISO 178	5450 MPa / 790 ksi	4900 MPa / 710 ksi
Flexural Elongation @ break	ISO 178	3.2%	2.5%
Impact Strength Charpy (notched)	ISO 179-2	2.9 kJ/m <sup>2</sup>	2.1 kJ/m <sup>2</sup>
Impact Strength Charpy (unnotched)	ISO 179-2	21.7 kJ/m <sup>2</sup>	10.0 kJ/m <sup>2</sup>
Impact Strength Izod (notched)	ISO 180	5.4 kJ/m <sup>2</sup>	3.5 kJ/m <sup>2</sup>
Impact Strength Izod (unnotched)	ISO 180	19.1 kJ/m <sup>2</sup>	9.4 kJ/m <sup>2</sup>
Thermal Properties	Test method	Typical values x-direction	Typical values z-direction
HDT A (1.8 MPa) <sup>2)</sup>	ISO 75-2	124 °C / 255 °F	
HDT B (0.45 MPa) <sup>2)</sup>	ISO 75-2	212 °C / 414 °F	
Vicat Softening Temperature A (10 N) <sup>2)</sup>	ISO 306	TBA	
Vicat Softening Temperature B (50 N) <sup>2)</sup>	ISO 306	210 °C / 410 °F	
Melting Temperature (20 K/min)	ISO 11357	219 °C / 426 °F	
Crystallization Temperature (20 K/min)	ISO 11357	172 °C / 342 °F	
Melt Volume Flow Rate (240°C; 2.16kg)	ISO 1133	6 cm <sup>3</sup> /10 min / 0.37 in <sup>3</sup> /10 min	
Coefficient of thermal expansion	ISO 11359-2	TBA	
Flammability	UL 94	TBA	
	FMVSS No 302	TBA	

Contact: [3d-printing@basf.com](mailto:3d-printing@basf.com)

<sup>1)</sup> measured after drying 2 days at 105°C / vacuum and conditioned at 23°C / 50 % r.H. for 7 days

<sup>2)</sup> measured after drying 14 days at 80°C / vacuum

All values measured with virgin material.