

# Technical Data Sheet

## Adsint PA11 ESD

### Components

Polyamide 11 ESD powder for Laser Sintering

### Product Description

Adsint PA11 ESD, a bio-based material (castor oil), is a special material for applications requiring electrostatic discharge behavior of the printed part. Parts produced with this material show a reduced surface and volume resistivity compared to non-functionalized PA11. Typical applications are where electrostatic discharge matters, i.e. in the electronics industry. The material is suitable for production of functional parts and i.e. manufacturing tools and fixtures. Adsint PA11 ESD is processable on most common SLS printers. Parameters for printing will be provided.

### Delivery form and warehousing

Adsint PA11 ESD powder should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment.

### 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

Adsint PA11 ESD comes in natural grey color. Further electrical properties, 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 [sales@basf-3dps.com](mailto:sales@basf-3dps.com).

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General Properties	Test method	Typical values
Bulk Density / kg/m <sup>3</sup>	DIN EN ISO 60	460
Printed Part Density / kg/m <sup>3</sup>	DIN EN ISO 1183-1	1070
Mean particle size d50 / μm	Laser Diffraction	40-50
Melting Temperature / °C	ISO 11357	204
Crystallization Temperature / °C	(10 K/min)	162
Melt Volume Flow Rate / cm <sup>3</sup> /10min	ISO 1133 (220 °C, 2.16 kg)	20

Mechanical Properties	Test method	Typical values x-direction		Typical values z-direction	
		dry <sup>1</sup>	cond. <sup>2</sup>	dry <sup>1</sup>	cond. <sup>2</sup>
Tensile Strength / MPa	ISO 527-2 (23 °C)	65	55	55	47
Tensile Modulus / MPa		3150	2300	2150	1550
Tensile Elongation at break / %		20	22	23	31
Tensile Strength / MPa	ISO 527-2 (80 °C)	38	34	30	27
Tensile Modulus / MPa		900	800	550	500
Tensile Elongation at break / %		37	35	49	46
Flexural Modulus / MPa	DIN EN ISO 178	3050	2550	2100	1650
Charpy Impact Strength (notched) / kJ/m <sup>2</sup>	ISO 179-1	6.6	7.3	4.7	5.3
Charpy Impact Strength (unnotched) / kJ/m <sup>2</sup>		80	101	90	107
Izod Impact Strength (notched) / kJ/m <sup>2</sup>	ISO 180	7.0	7.9	5.0	5.5
Izod Impact Strength (unnotched) / kJ/m <sup>2</sup>		67	81	58	83

Thermal Properties	Test method	Typical values <sup>1</sup>
HDT/A (1.8 MPa) / °C	ISO 75-2	111
HDT/B (0.45 MPa) / °C		186
Vicat/A (10 N) / °C	ISO 306	192
Vicat/B (50 N) / °C		183

Electrical Properties	Test method	Typical values x-direction	Typical values z-direction
Specific volume resistivity / Ωcm	IEC 62631-3-1	2.3*10 <sup>6</sup>	2.1*10 <sup>5</sup>
Specific surface resistivity / Ω	IEC 62631-3-2	1.3*10 <sup>4</sup>	3.4*10 <sup>4</sup>

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1) measured after drying 14 days at 80 °C / vacuum. Water content is about 0.08 % acc. to DIN EN ISO 15512.  
2) measured after conditioning 14 days at 70 °C / 62 % r.h. Water content is about 0.8 % acc. to DIN EN ISO 15512.  
All values measured with virgin material.