

Ultrasint® PA11 rCF

**Recycled Carbon Fiber |
Bio-derived | High Rigidity**

Extended TDS

**Complete Technical Documentation
and Testing Summary**

Contents

Technical Data Sheet	3
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Are you looking for an updated TDS version? [Check out the latest online version here.](#)

Technical Data Sheet

Bio-Derived, Recycled Carbon-Fiber Reinforced PA11 Powder for Highest Strength and Lightweight Design.

The data contained in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, this data does not relieve processors from carrying out their own investigations and tests; neither does this 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 informational purposes only and does not constitute a legally binding MSDS. The relevant MSDS can be obtained upon request from your supplier or you may contact Mass Additive Manufacturing GmbH directly at sales@forward-am.com.

General Properties	Method	Typical Values
Appearance	-	Natural white powder
Density (printed part)	DIN EN ISO 1183-1	1.09 g/cm³
Density (Bulk Density)	DIN EN ISO 60	0.44 g/cm³
Mean Particle Size d50	ISO 13320	40-50 µm
Melting Temperature (10 K/min)	ISO 11357	201°C
Crystallization Temperature (10 K/min)	ISO 11357	166°C
Melting Volume Flow Rate (220°C, 2.16 kg)	ISO 1133	11 cm³/10min
Melting Temperature (10 K/min)	ISO 11357	201°C

Tensile Properties	Method	Typical Values X-Direction		Typical Values Z-Direction	
		Dry ¹⁾	Cond ²⁾	Dry ¹⁾	Cond ²⁾
E Modulus	ISO 527-2	6000 MPa	4300 MPa	2400 MPa	1750 MPa
Ultimate Tensile Strength	ISO 527-2	84 MPa	69 MPa	47 MPa	42 MPa
Elongation at Break	ISO 527-2	7.5%	10%	4%	9%

Impact Properties	Method	Typical Values X-Direction		Typical Values Z-Direction	
		Dry ¹⁾	Cond ²⁾	Dry ¹⁾	Cond ²⁾
Charpy Notched, 23°C	DIN EN ISO 179-1	6.7 kJ/m²	7.2 kJ/m²	3 kJ/m²	2.7 kJ/m²
Charpy Unnotched, 23°C	DIN EN ISO 179-1	52 kJ/m²	52 kJ/m²	34 kJ/m²	38 kJ/m²

Thermal Properties	Method	Typical Values
HDT/A (1.8 MPa)	ISO 75-2	182°C
HDT/B (0.45 MPa)	ISO 75-2	191°C

Electrical Properties	Method	Typical Values	
		X-Direction	Z-Direction
Volume Resistivity	IEC 62631-3-1	8.5•10 ⁰ Ωcm	2.3•10 ² Ωcm
Specific Surface resistivity	IEC 62631-3-2	6.1•10 ³ Ω	2.6•10 ³ Ω

Mechanical properties overview

- 1) Measured after drying 14 days at 80°C / vacuum. Water content is about 0.05% acc. to DIN EN ISO 15512
- 2) Measured after conditioning 14 days at 70°C / 62% r.h. Water content is about 0.6% acc. to DIN EN ISO 15512
- 3) If not noted otherwise, all specimens are 3D printed. Samples were tested at room temperature, 23°C. All values measured with virgin material.

Printing Performance

The combination of 3D printer and material has a huge impact on the quality of the parts produced.

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