

# forwardam.

## Ultracur3D<sup>®</sup> ST 80 G

Tough | Economic | Grey

### Extended TDS

Complete Technical Documentation  
and Testing Summary

Version 1.1

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# Technical Data Sheet

Multi-purpose resin targeting the lowest cost per part.

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.

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General Properties	Method	Typical Values
Appearance	-	Grey
Viscosity, 25°C	Cone/Plate Rheometer <sup>1)</sup>	610 mPas
Viscosity, 30°C	Cone/Plate Rheometer <sup>1)</sup>	420 mPas
Density (Printed Part)	ASTM D792	1.2 g/cm <sup>3</sup>
Density (Liquid Resin)	ASTM D4052-18a	1.1 g/cm <sup>3</sup>

Tensile Properties <sup>2)</sup>	Method	Typical Values
E Modulus	ASTM D638	1750 MPa
Ultimate Tensile Strength	ASTM D638	38 MPa
Elongation at Break	ASTM D638	22%

Flexural Properties	Method	Typical Values
Flexural Modulus	ASTM D790	1450 MPa
Flexural Strength	ASTM D790	65 MPa

Impact Properties	Method	Typical Values
Notched Izod (Machined), 23°C	ASTM D256	26 J/m
Unnotched Izod, 23°C	ASTM D4812	620 J/m
Notched Charpy (Machined), 23°C	ISO 179-1	2.3 kJ/m <sup>2</sup>

Thermal Properties	Method	Typical Values
HDT at 0.45 MPa	ASTM D648	51°C
HDT at 1.82 MPa	ASTM D648	47°C

Biocompatibility	Method	Typical Values
Cytotoxicity – Neutral Red	EN ISO 10993-5 (2009)	PASS <sup>3)</sup>

Other	Method	Typical Values
Hardness Shore D	ASTM D2240	77

*Mechanical properties overview*

- 1) Determined with TA-Instrument DHR rheometer, cone/plate, diameter 60 mm, shear rate 100 s<sup>-1</sup>
- 2) Tensile type ASTM D638 type IV, Pulling speed 5 mm/min
- 3) For the statement on Biocompatibility data see Chapter: [Biocompatibility](#)
- 4) If not noted otherwise, all specimens are 3D printed. Samples were tested at room temperature, 23°C. ASTM sample size (L x W x H): ASTM D790 80 x 4 x 10 mm, ASTM D256 63 x 3.2 x 12 mm, ASTM D648 127 x 3.2 x 13 mm, ISO 179-1 80 x 4 x 10 mm

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# Biocompatibility

**Product: Ultracur3D® ST 80 G**

Revision: 08<sup>th</sup> of December 2021

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**3D printed test items of the above stated product have fulfilled the requirements of tests as stated below:**

**Cytotoxicity Testing- Neutral red:**

(EN ISO 10993-5 (2009))

The biocompatibility tests were recorded on test specimen of the referenced product to show compatibility of the material in general. The biocompatibility tests listed are not part of any continuous production protocol. The test assessments reflect only the test specimen and have to be retested on the final product. It remains the responsibility of the de-vice manufacturers and /or end-users to deter-mine the suitability of all printed parts for their respective application.

**For notice:**

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