

Technical Data Sheet

Ultracur3D[®] ST 45 B

Tough | Fast | Black

General Properties	Norm	Typical Values
Appearance	-	Black
Viscosity, 30 °C	Cone/Plate Rheometer ¹	230 mPas
Viscosity, 50 °C	Cone/Plate Rheometer ¹	80 mPas
Density (printed part)	ASTM D792	1.2 g/cm ³
Density (liquid resin)	ASTM D4052-18a	1.12 g/cm ³

Tensile Properties	Norm (5 mm/min)	Typical Values
E Modulus	ASTM D638	2000 MPa
Ultimate Tensile Strength	ASTM D638	53 MPa
Elongation at Break	ASTM D638	21 %

Flexural Properties	Norm	Typical Values
Flexural Modulus	ASTM D790	2100 MPa
Flexural Strength	ASTM D790	95 MPa

Impact Properties	Norm	Typical Values
Notched Izod (Machined), -30 °C	ASTM D256	20 J/m
Notched Izod (Machined), 23 °C	ASTM D256	30 J/m
Unnotched Izod, 23 °C	ASTM D256	515 J/m
Charpy notched, 23 °C	ISO 179-1	2.6 kJ/m ²

Thermal Properties	Norm	Typical Values
HDT at 0.45 MPa	ASTM D648	63 °C
HDT at 1.82 MPa	ASTM D648	52 °C
Flammability	UL 94 1.5 mm	HB

Dielectric/Electric Properties	Norm	Typical Values
Electrical strength	DIN EN 60243-1	29 kV / mm

Hardness	Norm	Typical Values
Shore D	ASTM D2240	80

Other	Norm	Typical Values
Biocompatibility	ISO 10993	Information available on request
Water Absorption, Short Term (24 hours)	ASTM D570	Information available on request

1) Determined with TA-Instrument DHR rheometer, cone/plate, diameter 60 mm, shear rate 100 s⁻¹

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 MSDS. The relevant MSDS can be obtained upon request from your supplier or you may contact BASF 3D Printing Solutions GmbH directly at sales@basf-3dps.com. Version 5.4

Technical Data Sheet

Ultracur3D® ST 45

Tough | Fast | Clear

General Properties	Norm	Typical Values
Appearance	-	Clear
Viscosity, 30 °C	Cone/Plate Rheometer ¹	210 mPas
Viscosity, 50 °C	Cone/Plate Rheometer ¹	80 mPas
Density (printed part)	ASTM D792	1.2 g/cm ³
Density (liquid resin)	ASTM D4052-18a	1.12 g/cm ³

Tensile Properties	Norm (5 mm/min)	Typical Values
E Modulus	ASTM D638	2300 MPa
Ultimate Tensile Strength	ASTM D638	60 MPa
Elongation at Break	ASTM D638	25 %

Flexural Properties	Norm	Typical Values
Flexural Modulus	ASTM D790	2400 MPa
Flexural Strength	ASTM D790	110 MPa

Impact Properties	Norm	Typical Values
Notched Izod (Machined), -30 °C	ASTM D256	20 J/m
Notched Izod (Machined), 23 °C	ASTM D256	30 J/m
Unnotched Izod, 23 °C	ASTM D256	509 J/m
Charpy notched, 23 °C	ISO 179-1	1.3 kJ/m ²

Thermal Properties	Norm	Typical Values
HDT at 0.45 MPa	ASTM D648	73 °C
HDT at 1.82 MPa	ASTM D648	61 °C
Flammability	UL 94 1.5 mm	HB

Hardness	Norm	Typical Values
Shore D	ASTM D2240	80

Other	Norm	Typical Values
Biocompatibility	ISO 10993	Information available on request
Water Absorption, Short Term (24 hours)	ASTM D570	Information available on request

Detailed material data and support for FEA simulations available on request (sales@basf-3dps.com)

¹⁾ Determined with TA-Instrument DHR rheometer, cone/plate, diameter 60 mm, shear rate 100 s⁻¹

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 MSDS. The relevant MSDS can be obtained upon request from your supplier or you may contact BASF 3D Printing Solutions GmbH directly at sales@basf-3dps.com. Version 4.4