

PROPERTY	VALUE	UNIT	TEST METHOD	TEST SPECIMEN
Density	1,81	g / cm <sup>3</sup>	ISO 1183	>10 x >10 x 4 mm from multi-purpose test specimen Type A (ISO 3167)
Content of reinforcing material/filler	44	weight - %	ISO 3451-1	Powder / Pellets / Regrind
Water Absorption at 23 °C and after 24 h		%	ISO 62	60 x 60 x 1 mm test specimen D1 (ISO 294-3)
Moisture Absorption at 23 °C and 50 % relative humidity to sat.		%	ISO 62	60 x 60 x 1 mm test specimen D1 (ISO 294-3)
Mold Shrinkage parallel/normal	0,1 / 0,5	%	ISO/FDIS 294-4:2000	60 x 60 x 2 mm test specimen D2 (ISO/FDIS 294-3:2001)
<b>MECHANICAL PROPERTIES,</b> measured under standard conditions, ISO 291-23/50				
Tensile Strength	102	MPa	ISO 527-1/-2; test speed 5 mm/min	Multi-purpose test specimen Type A (ISO 3167)
Elongation at Break	3,4	%	ISO 527-1/-2; test speed 5 mm/min	Multi-purpose test Type A (ISO 3167)
Tensile Modulus	9300	MPa	ISO 527-1/-2; test speed 5 mm/min	Multi-purpose test Type A (ISO 3167)
Flexural Strength	109	MPa	ISO 178	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Flexural Modulus	10500	MPa	ISO 178	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Compressive Strength at 1% strain		MPa	ISO 604	10 x 10 x 4 mm from Multi-purpose test specimen Type A (ISO 3167)
Compressive Modulus		MPa	ISO 604	50 x 10 x 4 mm from multi-purpose test specimen Type A (ISO 3167)
Shear Strength		MPa	ASTM D 732	Ø 50 mm, s = 3,2 mm, ASTM - disc
Rockwell Hardness, M-Scale			ISO 2039-2	60 x 60 x >6 mm plaques
Tensile Impact Strength		kJ / m <sup>2</sup>	ISO 8526	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Impact Strength (Charpy)		kJ / m <sup>2</sup>	ISO 179-1/1eU	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Notched Impact Strength (Charpy)		kJ / m <sup>2</sup>	ISO 179-1/1eA	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Impact Strength (Izod)	33	kJ / m <sup>2</sup>	ISO 180/1U	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Notched Impact Strength (Izod)	6	kJ / m <sup>2</sup>	ISO 180/1A	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Taber Abrasion		mg / 1000 U	ASTM D 1044	Ø 10,2 mm, s = 3,2 mm, ASTM - disc
<b>THERMAL PROPERTIES</b>				
Deflection Temperature Under Load DTUL (HDT/A) 1.8 MPa	227	°C	ISO 75-1/-2	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Deflection Temperature Under Load DTUL (HDT/B) 0.45 MPa		°C	ISO 75-1/-2	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Deflection Temperature Under Load DTUL (HDT/C) 8.0 MPa		°C	ISO 75-1/-2	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Vicat Softening Temperature VST B50		°C	ISO 306	10 x 10 x 4 mm from multi-purpose test specimen Type A (ISO 3167)
Melting Point DSC, 10 K/min		°C	ISO 11357	Moulding compound
Coefficient of Linear Thermal Expansion between 20 °C and 80 °C (flow)	12,3	x 10 <sup>-6</sup> K <sup>-1</sup>	ISO 11359-1/-2	30 x 10 x 4 mm from multi-purpose test specimen (ISO 3167)
Coefficient of Linear Thermal Expansion between 20 °C and 80 °C (transverse)	26,8	x 10 <sup>-6</sup> K <sup>-1</sup>	ISO 11359-1/-2	30 x 10 x 4 mm from 80 x 80 x 4 mm plaques (ISO 3167)
Coefficient of Linear Thermal Expansion between -50 °C and 200 °C (flow)	12,5	x 10 <sup>-6</sup> K <sup>-1</sup>	ISO 11359-1/-2	30 x 10 x 4 mm from multi-purpose test specimen (ISO 3167)
Coefficient of Linear Thermal Expansion between -50 °C and 200 °C (transverse)	30,3	x 10 <sup>-6</sup> K <sup>-1</sup>	ISO 11359-1/-2	30 x 10 x 4 mm from 80 x 80 x 4 mm plaques (ISO 3167)

**Ticona GmbH**

Information Service

Tel: +49 (0) 180-584 2662 (Germany)

+49 (0) 69-305 16299 (Europe)

Fax: +49 (0) 180-202 1202 (Germany and Europe)

eMail: [Infoservice@ticona.de](mailto:Infoservice@ticona.de)Internet: [www.ticona.com](http://www.ticona.com)

Please note the information on page 2

ELECTRICAL PROPERTIES, measured under standard conditions, ISO 291-23/50	VALUE	UNIT	TEST METHOD	TEST SPECIMEN
Dielectric Constant Dc at 1 MHz, Gold plated			IEC 60250	Ø 10 mm, s = 0,4 mm
Dielectric Constant Dc at 1 GHz, Gold plated			IEC 60250	Ø 10 mm, s = 0,4 mm
Dissipation Factor tan δ at 1 MHz, Gold plated			IEC 60250	Ø 10 mm, s = 0,4 mm
Dissipation Factor tan δ at 1 GHz, Gold plated			IEC 60250	Ø 10 mm, s = 0,4 mm
Dielectric Constant Dc at 1 MHz, unplated			IEC 60250	Ø 50 mm, s = 3,2 mm, ASTM - disc
Dielectric Constant Dc at 10 MHz, unplated			IEC 60250	Ø 50 mm, s = 3,2 mm, ASTM - disc
Dissipation Factor tan δ at 1 MHz, unplated			IEC 60250	Ø 50 mm, s = 3,2 mm, ASTM - disc
Dissipation Factor tan δ at 10 MHz, unplated			IEC 60250	Ø 50 mm, s = 3,2 mm, ASTM - disc
Volume Resistivity		Ohm · m	IEC 60093	60 x 60 x 1 mm test specimen D1 (ISO 294-3)
Surface Resistivity		Ohm	IEC 60093	60 x 60 x 1 mm test specimen D1 (ISO 294-3)
Comparative Tracking Index CTI			IEC 60112	20 x 20 x 4 mm from multi-purpose test specimen Type A (ISO 3167)
Comparative Tracking Index CTI M			IEC 60112	20 x 20 x 4 mm from multi-purpose test specimen Type A (ISO 3167)
Dielectric Strength P25/P75		kV / mm	IEC 60243, part 1	60 x 60 x 1 mm test specimen D1 (ISO 294-3)
Arc Resistance		s	ASTM D 495	Ø 50 mm, s = 3,2 mm, ASTM - disc
Ball Pressure Test		°C	IEC 60695-10-2:2003	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
<b>FLAMMABILITY</b>				
Flammability class V-0, test specimen thickness		mm	UL 94	125 x 13 x d mm
Limiting Oxygen LOI		% - O <sub>2</sub>	ISO 4589-2	80 x 10 x 4 mm Type B from multi-purpose test specimen Type A (ISO 3167)
Glow Wire Flamability Index - GWFI		°C	IEC 60695 part 2-12:2001*	1 mm thickness
Glow Wire Ignition Test - GWIT		°C	IEC 60695 part 2-13:2001*	1 mm thickness

\* according to IEC60335

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values.

Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication.

Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones which exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique, or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards.

We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and to entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.

The products mentioned herein are not intended for use in medical or dental implants.

**Ticona GmbH**

Information Service

Tel: +49 (0) 180-584 2662 (Germany)

+49 (0) 69-305 16299 (Europe)

Fax: +49 (0) 180-202 1202 (Germany and Europe)

eMail: [Infoservice@ticona.de](mailto:Infoservice@ticona.de)

Internet: [www.ticona.com](http://www.ticona.com)