

GUR® 4113 | PE-UHMW | Unfilled

Description

GUR 4113 UHMW-PE is a linear polyolefin in powder form with a molecular weight of approximately 3.9 MM g/mol calculated using Margolies equation. This resin has good abrasion resistance, low frictional properties and a high notched impact strength of > 170 kJ/m². The resin is normally used for compression molding of thin sheets.

Physical properties	Value	Unit	Test Standard
Density	940	kg/m ³	ISO 1183
Mass melt-flow rate (MFR) 190°C/21.6 kg		g/10 min	ISO 1133
Water absorption (23°C-sat)		%	ISO 62
Humidity absorption (23°C/50%RH)		%	ISO 62
Elongational Stress F (150/10)	0.13	MPa	ISO 11542-2
Intrinsic viscosity	1790	ml/g	ISO 1628-3
Viscosity number	2000	cm ³ /g	ISO 307, 1157, 1628

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	750	MPa	ISO 527-2/1A
Tensile stress at yield (50mm/min)	17	MPa	ISO 527-2/1A
Tensile strain at yield (50mm/min)	20	%	ISO 527-2/1A
Nominal strain at break (50mm/min)	>50	%	ISO 527-2/1A
Tensile creep modulus (1h)	450	MPa	ISO 899-1
Tensile creep modulus (1000h)	250	MPa	ISO 899-1
Charpy impact strength (14° V-notch both sides)	170	kJ/m ²	ISO 11542-2
Shore hardness D scale 15 sec value	62	-	ISO 868
Ball indentation hardness 30 sec value	38	N/mm ²	ISO 2039-1
Wear by sandslurry method (based on GUR 4120=100)	110	-	Internal

Thermal properties	Value	Unit	Test Standard
DTUL @ 1.8 MPa	42	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	65	°C	ISO 75-1/-2
Vicat softening temperature B50 (50°C/h 50N)	80	°C	ISO 306
Coeff.of linear therm. expansion (parallel)	2	E-4/°C	ISO 11359-2
Flammability @1.6mm nom. thickn.	HB	class	UL94
thickness tested (1.6)	1.6	mm	UL94
Thermal conductivity at 23°C	0.41	W/(m K)	Internal
Specific heat at 23°C	1.84	kJ/(kg-°K)	Internal

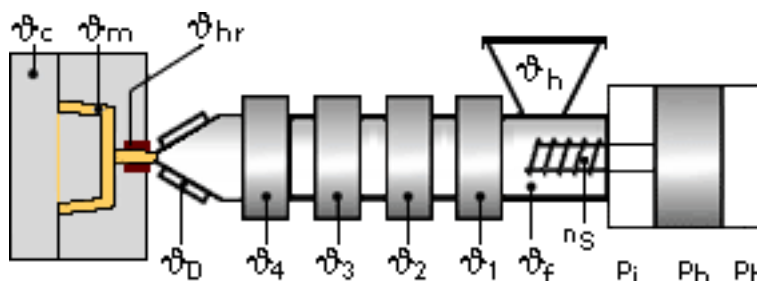
Electrical properties	Value	Unit	Test Standard
Relative permittivity - 100 Hz	2.1	-	IEC 60250
Relative permittivity - 1 MHz	3	-	IEC 60250
Dissipation factor - 100 Hz	3.9	E-4	IEC 60250
Dissipation factor - 1 MHz	10	E-4	IEC 60250
Volume resistivity	>1E12	Ohm*m	IEC 60093
Surface resistivity	>1E12	Ohm	IEC 60093
Electric strength	45	kV/mm	IEC 60243-1
Comparative tracking index CTI	600	-	IEC 60112

Processing properties	Value	Unit	Test Standard
Powder	Yes	-	ASTM D638

GUR® 4113 | PE-UHMW | Unfilled

Test specimen production	Value	Unit	Test Standard
Comp. molding mold temperature	210	°C	ISO 293
Comp. molding cooling rate	15	K/min	ISO 293

Typical injection moulding processing conditions



Special Info:

Not for Injection Molding. For Compression Molding only. See Ticona for processing.

Contact Information

Americas

Ticona North American Headquarters
Product Information Service
8040 Dixie Highway
Florence, KY 41042
USA
Tel.: +1-800-833-4882
Tel.: +1-859-372-3244
email: prodinfo@ticona.com
Ticona on the web: www.ticona.com

Customer Service

Tel.: +1-800-526-4960
Tel.: +1-859-372-3214
Fax: +1-859-372-3125

Europe

Ticona GmbH
Information Service
Tel.: +49 (0) 180-5842662 (Germany)
+49 (0) 69-30516299 (Europe)
Fax: +49 (0) 180-2021202 (Germany & Europe)
email: infoservice@ticona.de
Internet: www.ticona.com

General Disclaimer

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.

GUR® 4113 | PE-UHMW | Unfilled

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 that 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 entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed (+49 (0) 69 30516299 for Europe and +1 859-372-3244 for the Americas) 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.

© Copyright 2007, Ticona, all rights reserved. (Pub. 26-September-2013)