

GUR[®] 2122 M

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UHMW-PE powder grade: special particle morphology

Product information

Resin Identification	(PE-UHMW)	ISO 1043
Part Marking Code	>(PE-UHMW)<	ISO 11469
Average molecular weight	4.2E6 g/mol	Margolies' equation
Average particle size, d50	130 µm	laser scattering

Rheological properties

Viscosity number	2100 cm ³ /g	ISO 307, 1628
Intrinsic viscosity	1900	ISO 307, 1628

Typical mechanical properties

Tensile modulus	770 MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	21 MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	13 %	ISO 527-1/-2
Tensile stress at 50% strain	20 MPa	ISO 527-1/-2
Tensile stress at break, 50mm/min	39 MPa	ISO 527-1/-2
Nominal strain at break	400 %	ISO 527-1/-2
Elongational stress F, 150/10	0.21 MPa	ISO 21304-2
Charpy double notched impact strength, 23°C	170 kJ/m ²	ISO 21304-2
Poisson's ratio	0.46 ^[C]	
Shore D hardness, 15s	60	ISO 48-4 / ISO 868

[C]: Calculated

Tribological properties

Wear by sandslurry method (based on GUR 4120=100)	100
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Thermal properties

Temperature of deflection under load, 1.8 MPa	41 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	80 °C	ISO 306

Electrical properties

Volume resistivity	1E12 Ohm.m	IEC 62631-3-1
Surface resistivity	1E12 Ohm	IEC 62631-3-2

Physical/Other properties

Density	930 kg/m ³	ISO 1183
Bulk density	250 kg/m ³	ISO 60

Characteristics

Processing	Other Extrusion, Porous Sintering
Delivery form	Powder
Special characteristics	High impact or impact modified, Hydrolysis resistant, Low wear / Low friction, Chemical resistant

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Additional information

Other extrusion

Preprocessing

Drying of the material is not required due to a negligible moisture content of <0.01 %. However, it is recommended that material with condensed water accumulation be pre-dried at approx. 80-100 °C in a recirculation air drying oven for 2-4 hours. Max. water content 0.1 %

Processing

All ram extruders can be used to produce semi-forms such as rod, tube, board, sheet or profiles.

Temperature Profile: 180-230 °C

Postprocessing

Conditioning is not necessary.