Celanese
The chemistry inside innovation™

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		

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.