GUR® 2122

Ultra High Molecular Weight Polyethylene

Celanese Corporation

Message:

GUR 2122 UHMW-PE is a linear polyolefin resin in powder form with a molecular weight of approximately 4.5 MM g/mol calculated using Margolies' equation. The extremely high molecular weight of this resin yields several unique properties including superior abrasion resistance and impact strength. Its unique morphology produces a low bulk density (0.20 to 0.25 g/cm3) making this resin particularly suitable for compression molding with high filler content or for free sintering of porous parts.

General Information			
Features	Good Abrasion Resistance Good Impact Resistance High Molecular Weight		
RoHS Compliance	Contact Manufacturer		
Forms	Powder		
Processing Method	Compression Molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity			
--	0.928	g/cm³	ASTM D792
--	0.930	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR)			
190°C/21.6 kg	< 0.10	g/10 min	ASTM D1238
190°C/21.6 kg	< 1.0	g/10 min	ISO 1133
Water Absorption			ISO 62
Saturation, 23°C	< 0.010	%	
Equilibrium, 23°C, 50% RH	< 0.010	%	
Viscosity Number	2200	cm³/g	ISO 307
Elongational Stress F - 150/10	0.220	MPa	ISO 1152-2
Intrinsic Viscosity	20	dl/g	ISO 1628-3
Abrasion Loss	100		Internal Method
Charpy Impact Strength [1]	120	kJ/m²	ISO 1152-2
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness			
Shore D	63		ASTM D2240
Shore D, 15 sec	60		ISO 868
Ball Indentation Hardness [2]	38.0	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
23°C	703	MPa	ASTM D638
--	790	MPa	ISO 527-2/1A/1

Tensile Strength			
Yield, 23°C	21.4	MPa	ASTM D638
Yield	17.0	MPa	ISO 527-2/1A/50
Tensile Elongation			
Yield, 23°C	> 350	%	ASTM D638
Yield	20	%	ISO 527-2/1A/50
Nominal Tensile Strain at Break	> 50	%	ISO 527-2/1A/50
Tensile Creep Modulus			ISO 899-1
1 hr	550	MPa	
1000 hr	270	MPa	
Coefficient of Friction (vs. Steel - Dynamic)	0.10		Internal Method
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature			
0.45 MPa, Unannealed	65.0	°C	ISO 75-2/B
1.8 MPa, Unannealed	42.0	°C	ISO 75-2/A
Vicat Softening Temperature	80.0	°C	ASTM D1525, ISO 306/B50
CLTE - Flow	2.0E-4	cm/cm/°C	ASTM D696, ISO 11359-2
Specific Heat			Internal Method
--	1840	J/kg/°C	
23°C	1840	J/kg/°C	
Thermal Conductivity (23°C)	0.41	W/m/K	Internal Method
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity			
--	> 1.0E+13	ohms	ASTM D257
--	> 1.0E+12	ohms	IEC 60093
Volume Resistivity			
--	> 1.0E+15	ohms·cm	ASTM D257
--	> 1.0E+14	ohms·cm	IEC 60093
Electric Strength	45	kV/mm	IEC 60243-1
Dielectric Constant			
1 MHz	3.00		ASTM D150, IEC 60250
100 Hz	2.10		IEC 60250
Dissipation Factor			IEC 60250
100 Hz	3.9E-4		
1 MHz	1.0E-3		
Comparative Tracking Index	600	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (1.60 mm)	HB		UL 94
NOTE			
1.	14° V-notch both sides		
2.	30 sec		

Recommended distributors for this material

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