

GUR® 4012 F

UHMW-PE powder grade for battery separators
 HMW-PE powder grade for battery separators

Product information

Average molecular weight	1.7E6 g/mol	Margolies' equation
Average particle size, D50	115 µm	laser scattering

Rheological properties

Melt mass-flow rate, Temperature	190 °C	
Melt mass-flow rate, Load	21.6 kg	
Viscosity number	1100 cm³/g	ISO 307, 1157, 1628
Intrinsic viscosity	1000	ISO 307, 1157, 1628

Typical mechanical properties

Tensile Modulus	900 MPa	ISO 527-1/-2
Yield stress, 50mm/min	22 MPa	ISO 527-1/-2
Yield strain, 50mm/min	9 %	ISO 527-1/-2
Stress at 50% strain	19 MPa	ISO 527-1/-2
Stress at break, 50mm/min	42 MPa	ISO 527-1/-2
Nominal strain at break	550 %	ISO 527-1/-2
Elongational stress, 150/10	0.04 MPa	ISO 21304-2
Charpy double notched impact strength, 23°C	190 kJ/m²	ISO 21304-2
Shore D hardness, 15s	60	ISO 48-4 / ISO 868

Tribological properties

Relative Wear	140	Internal
(based on GUR 4120=100), sandslurry method		

Thermal properties

Temp. 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

Other properties

Density	940 kg/m³	ISO 1183
Bulk density	450 kg/m³	ISO 60



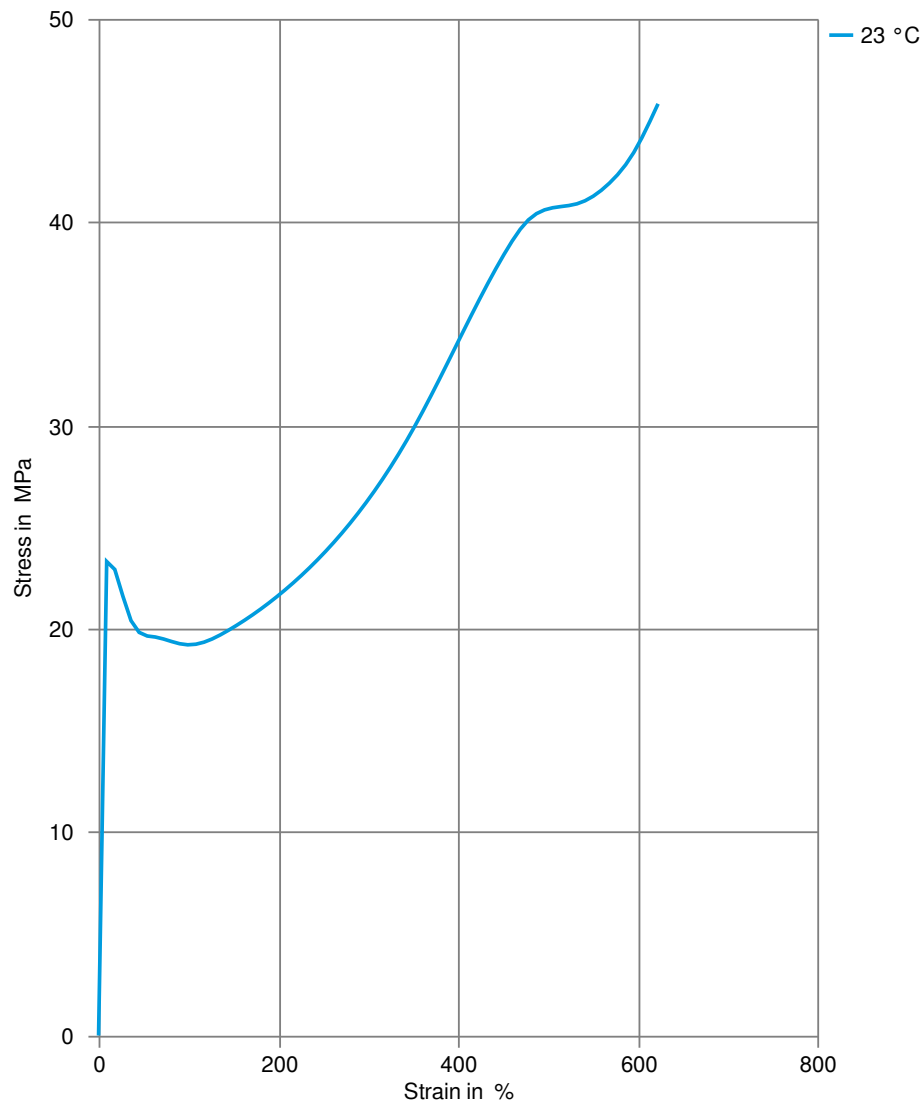
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Characteristics

Food contact

FDA 21 CFR

Stress-strain



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Secant modulus-strain

