

GUR® 4120

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UHMW-PE powder grade

Product information

Resin Identification	(PE-UHMW)	ISO 1043
Part Marking Code	>(PE-UHMW)<	ISO 11469
Average molecular weight	5E6 g/mol	Margolies' equation
Average particle size, d50	120 µm	laser scattering

Rheological properties

Viscosity number	2400 cm³/g	ISO 307, 1628
Intrinsic viscosity	2100	ISO 307, 1628

Typical mechanical properties

Tensile modulus	660 MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	20 MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	14 %	ISO 527-1/-2
Tensile stress at 50% strain	19 MPa	ISO 527-1/-2
Tensile stress at break, 50mm/min	43 MPa	ISO 527-1/-2
Nominal strain at break	470 %	ISO 527-1/-2
Elongational stress F, 150/10	0.26 MPa	ISO 21304-2
Charpy double notched impact strength, 23°C	240 kJ/m²	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	38 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	80 °C	ISO 306

Flammability

UL recognition	yes	UL 94
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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/m³	ISO 1183
Bulk density	450 kg/m³	ISO 60

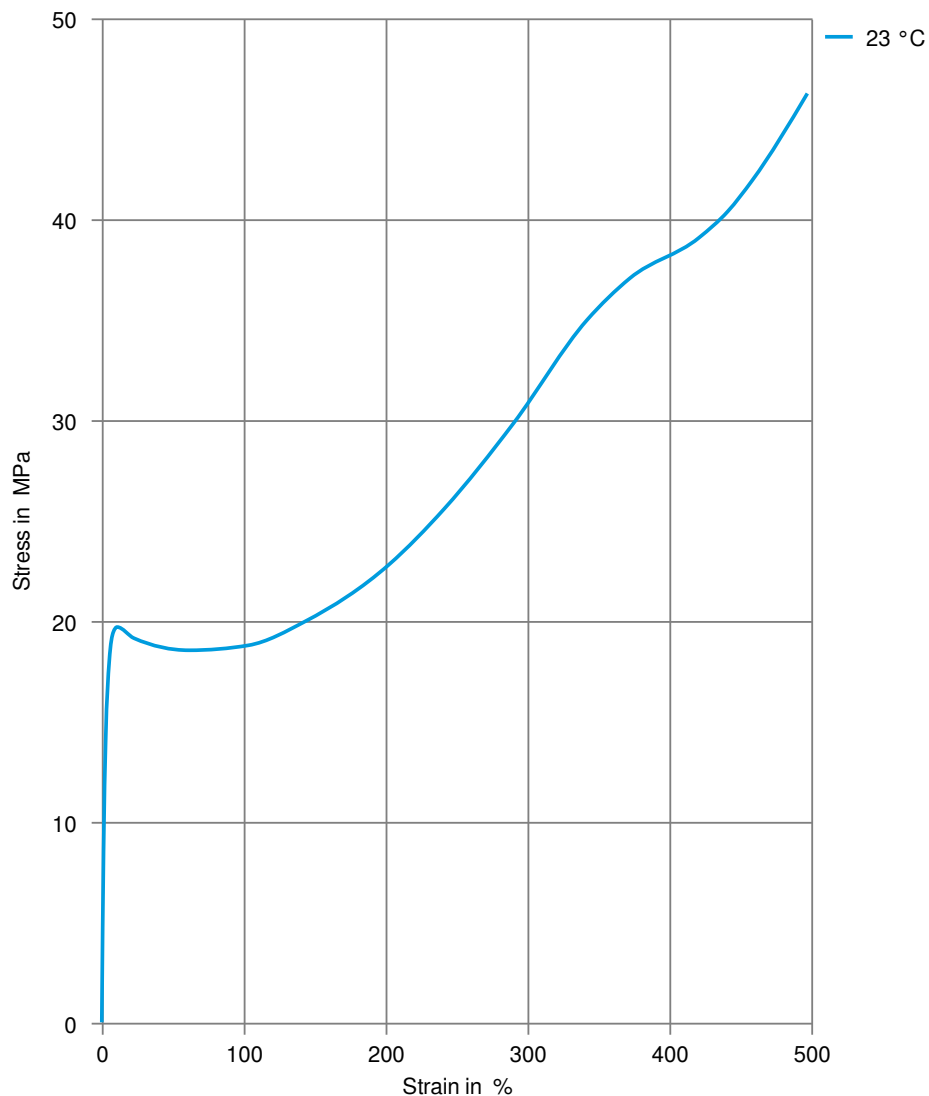
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Characteristics

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

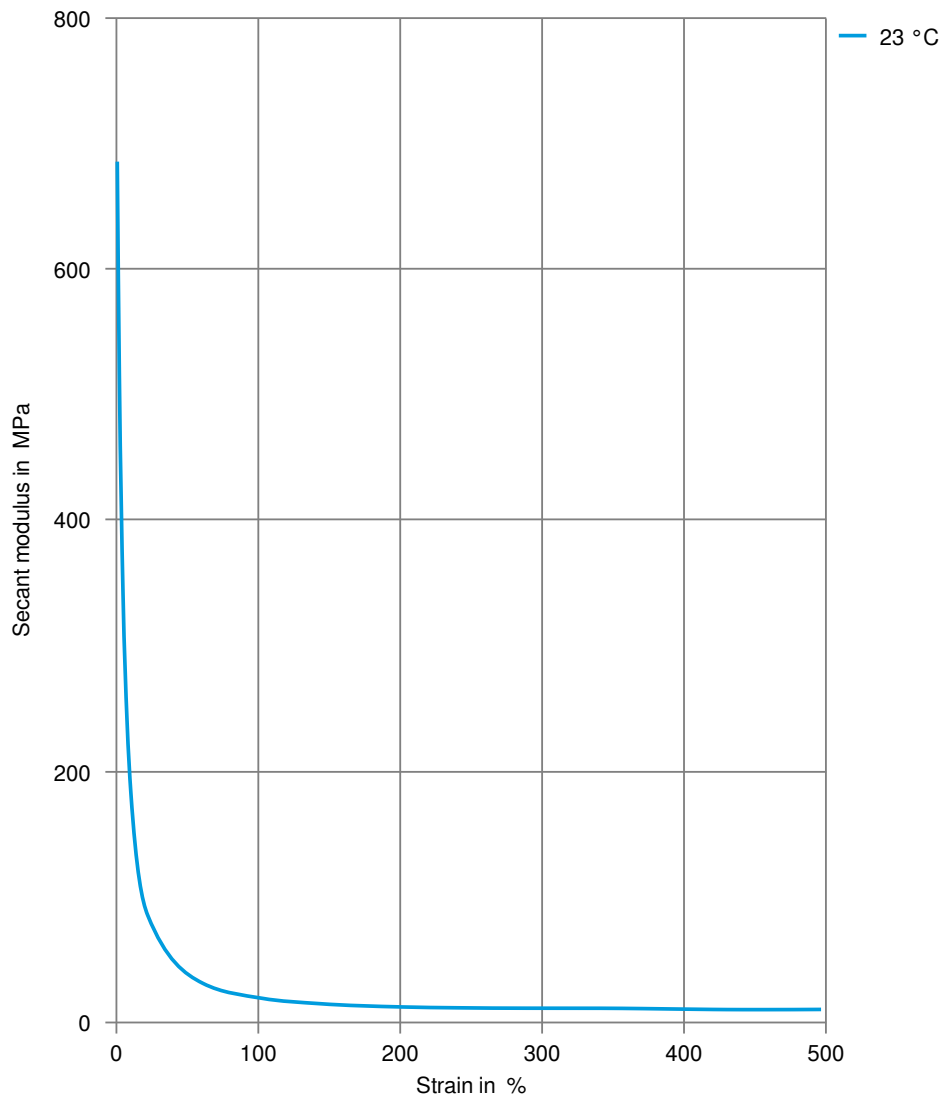
Stress-strain



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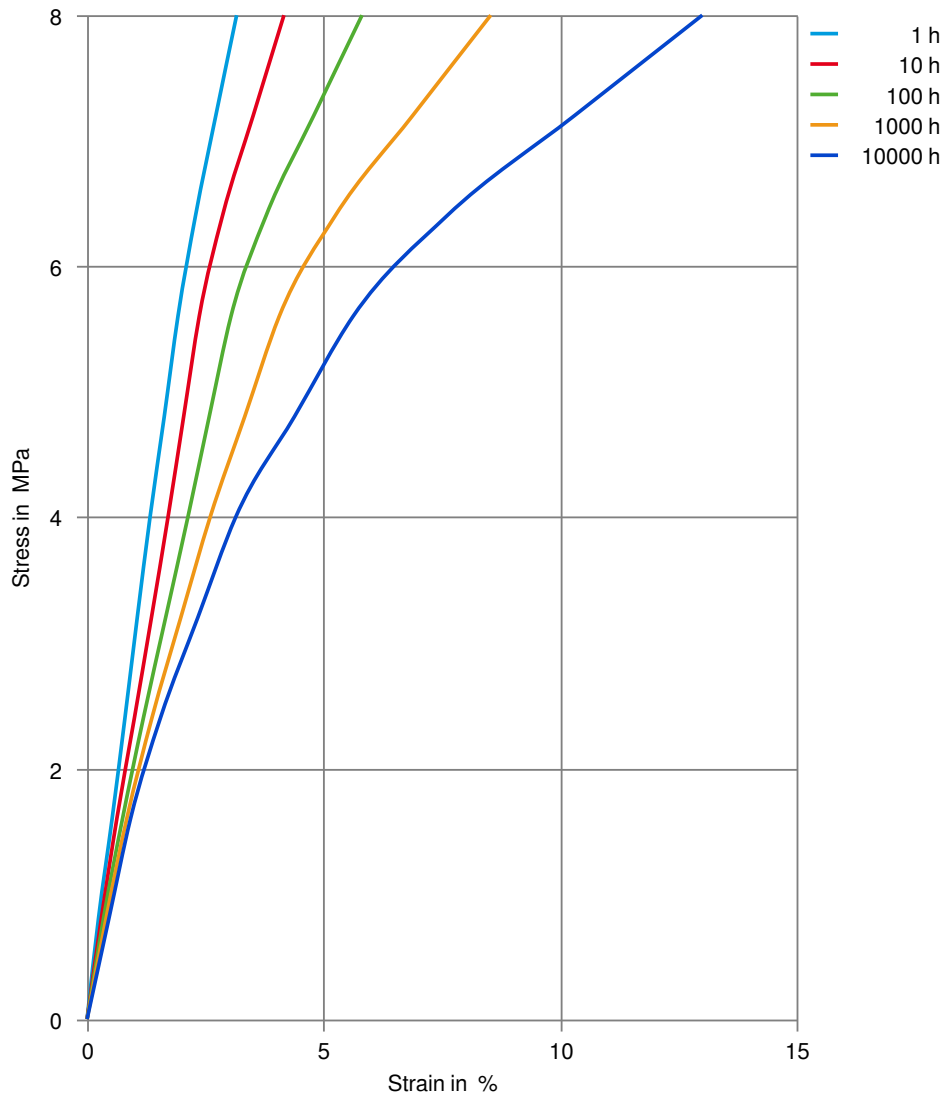
Secant modulus-strain



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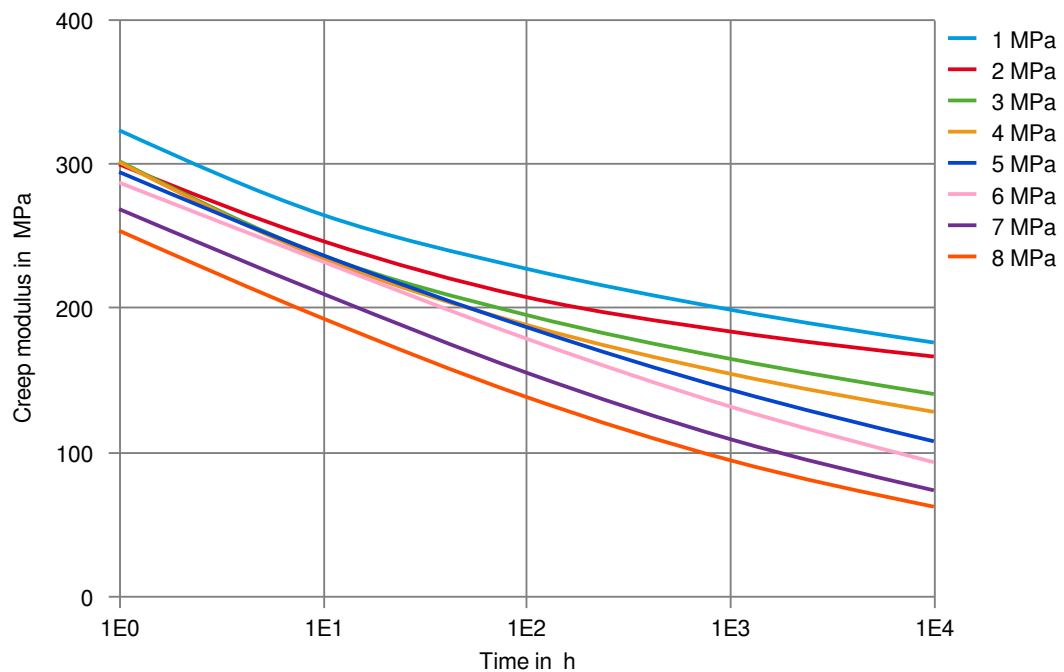
Stress-strain (isochronous) 23°C



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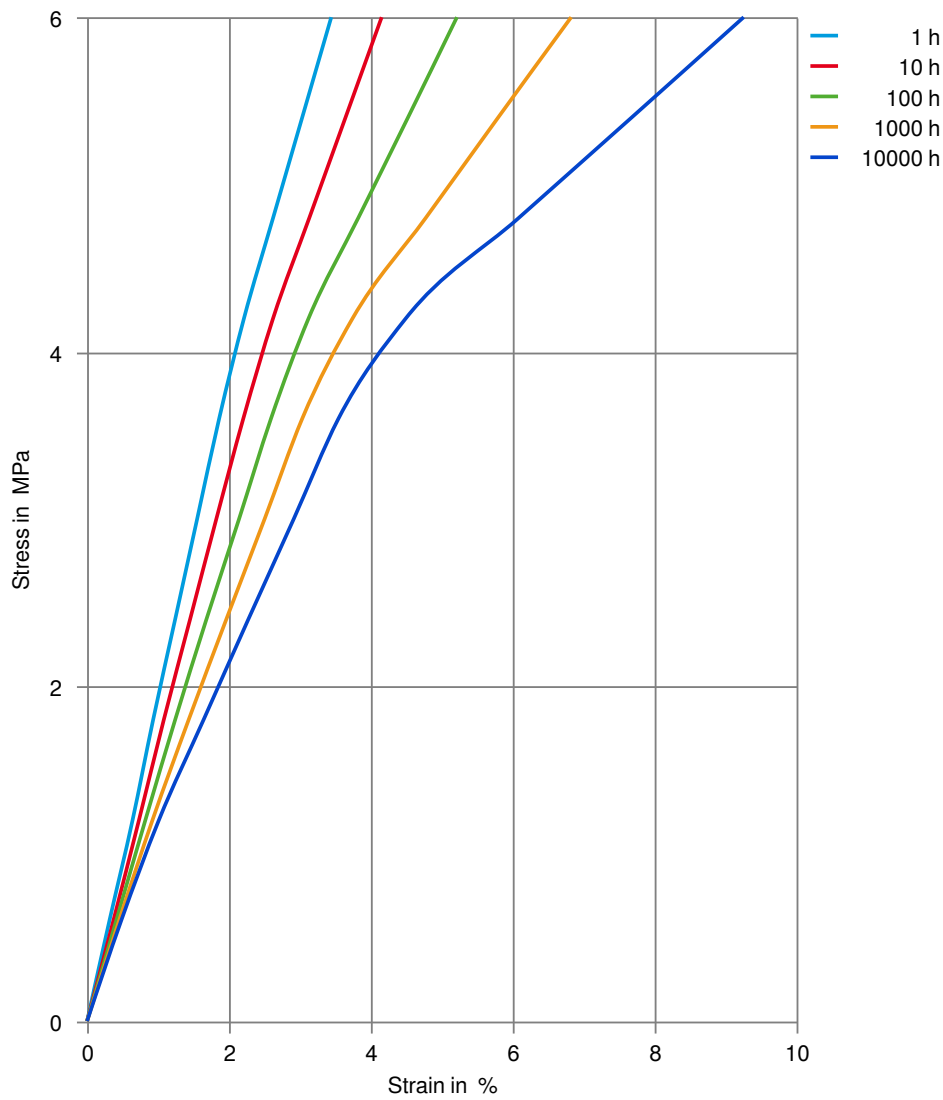
Creep modulus-time 23°C



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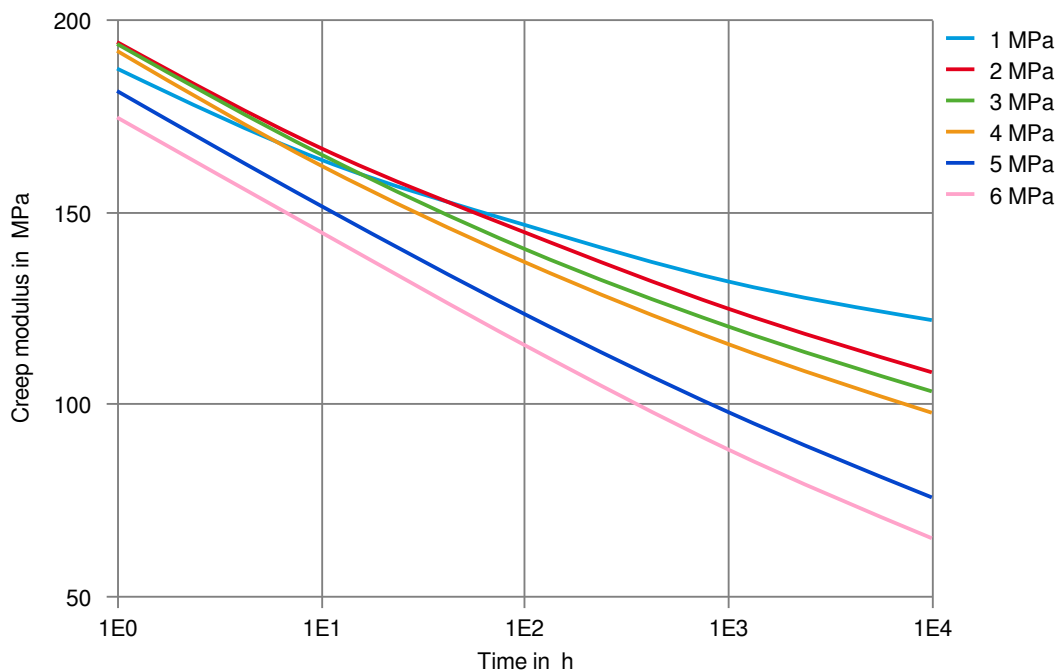
Stress-strain (isochronous) 40°C



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Creep modulus-time 40°C



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