

GUR® 4120 ECO-B

UHMW-PE powder grade

ECO-B: GUR ECO-B is a (U)HMW-PE with the same properties and performance as standard grades but produced with sustainability in mind. Using a mass-balance approach, biogenic feedstocks are used to offset the use of fossil-based raw materials and decrease greenhouse gas emissions. The process is audited and certified according to the ISCC Plus mass balance approach.

Product information

Average molecular weight	4.7E6 g/mol	Margolies' equation
Average particle size, D50	120 µm	laser scattering

Rheological properties

Melt mass-flow rate, Temperature	190 °C	
Melt mass-flow rate, Load	21.6 kg	
Viscosity number	2300 cm³/g	ISO 307, 1157, 1628
Intrinsic viscosity	2000	ISO 307, 1157, 1628

Typical mechanical properties

Tensile Modulus	660 MPa	ISO 527-1/-2
Yield stress, 50mm/min	20 MPa	ISO 527-1/-2
Yield strain, 50mm/min	14 %	ISO 527-1/-2
Stress at 50% strain	19 MPa	ISO 527-1/-2
Stress at break, 50mm/min	43 MPa	ISO 527-1/-2
Nominal strain at break	470 %	ISO 527-1/-2
Elongational stress, 150/10	0.24 MPa	ISO 21304-2
Charpy double notched impact strength, 23°C	240 kJ/m²	ISO 21304-2
Shore D hardness, 15s	60	ISO 48-4 / ISO 868

Tribological properties

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

Thermal properties

Temp. of deflection under load, 1.8 MPa	38 °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



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Other properties

Density	930 kg/m ³	ISO 1183
Bulk density	450 kg/m ³	ISO 60

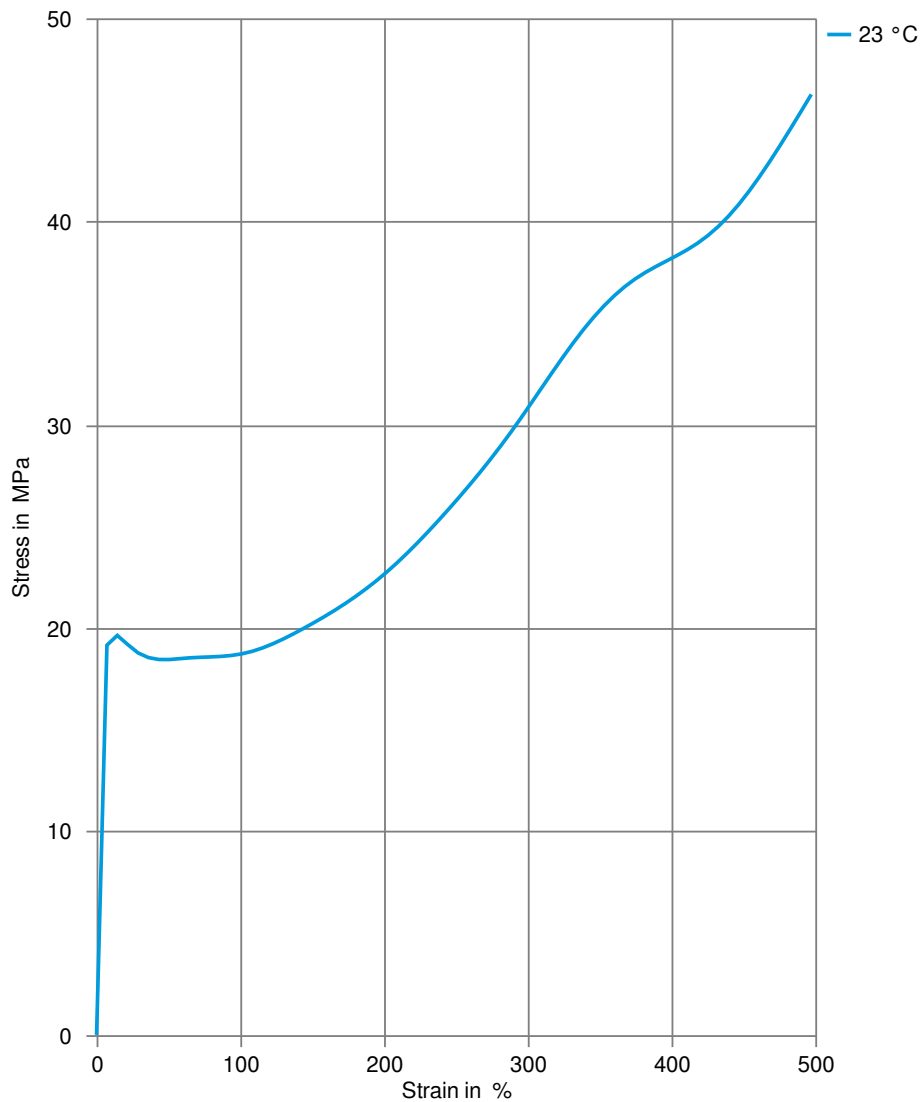
Characteristics

Additives	Biobased
Food contact	FDA 21 CFR

Stress-strain

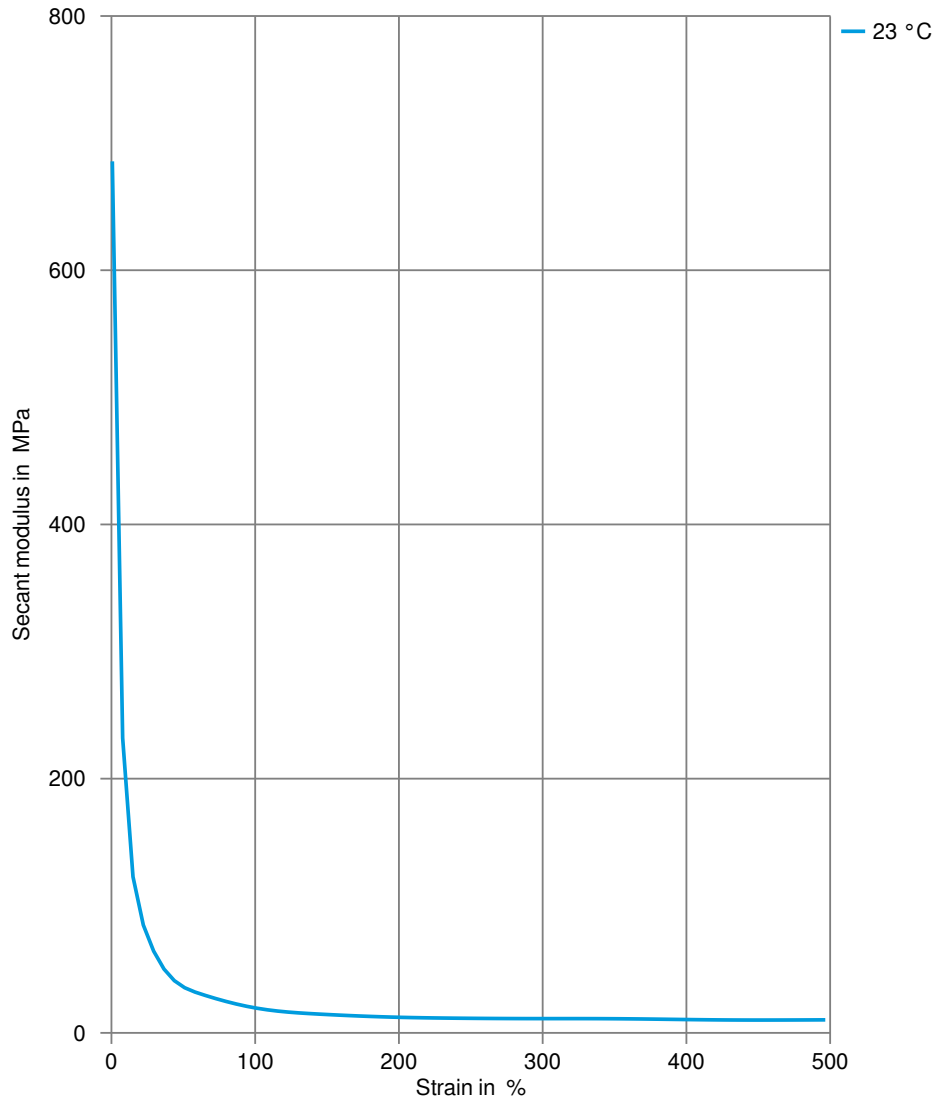


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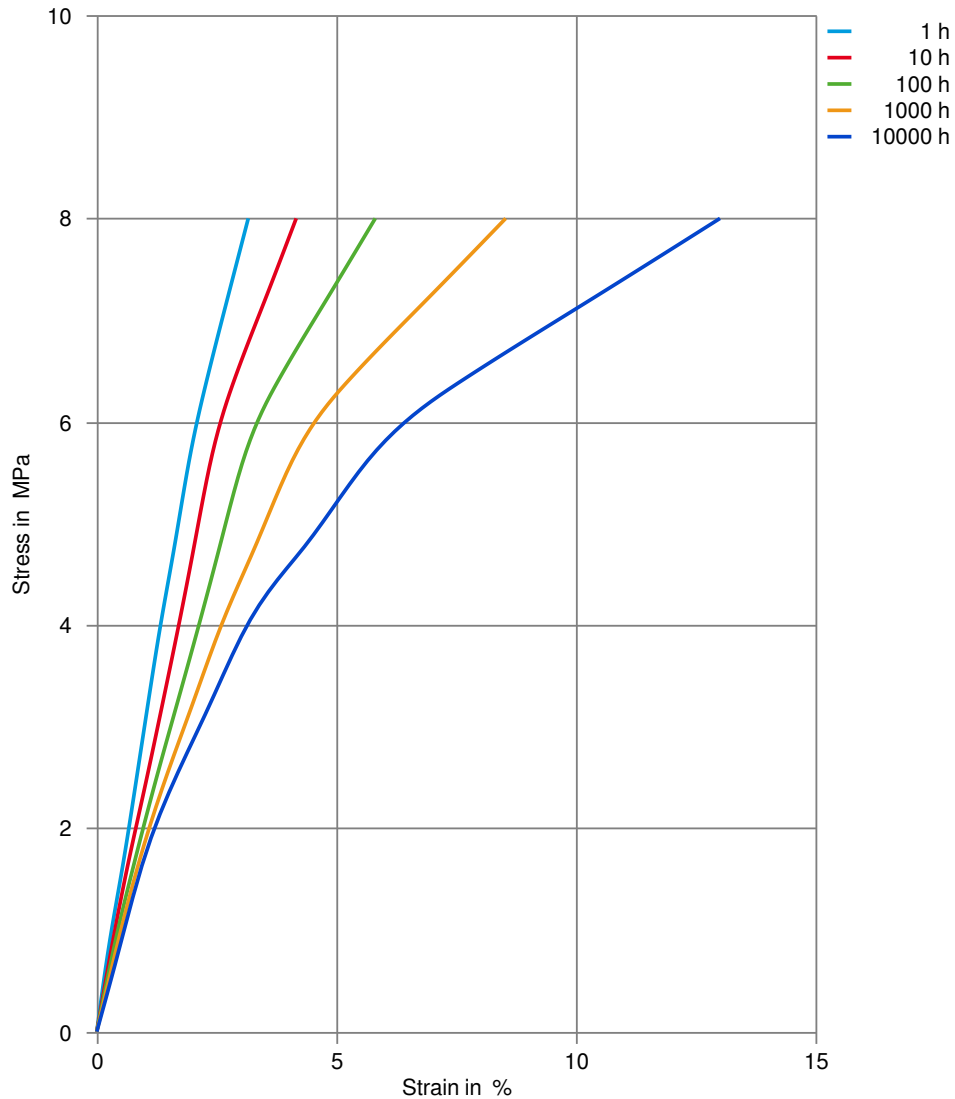
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Secant modulus-strain



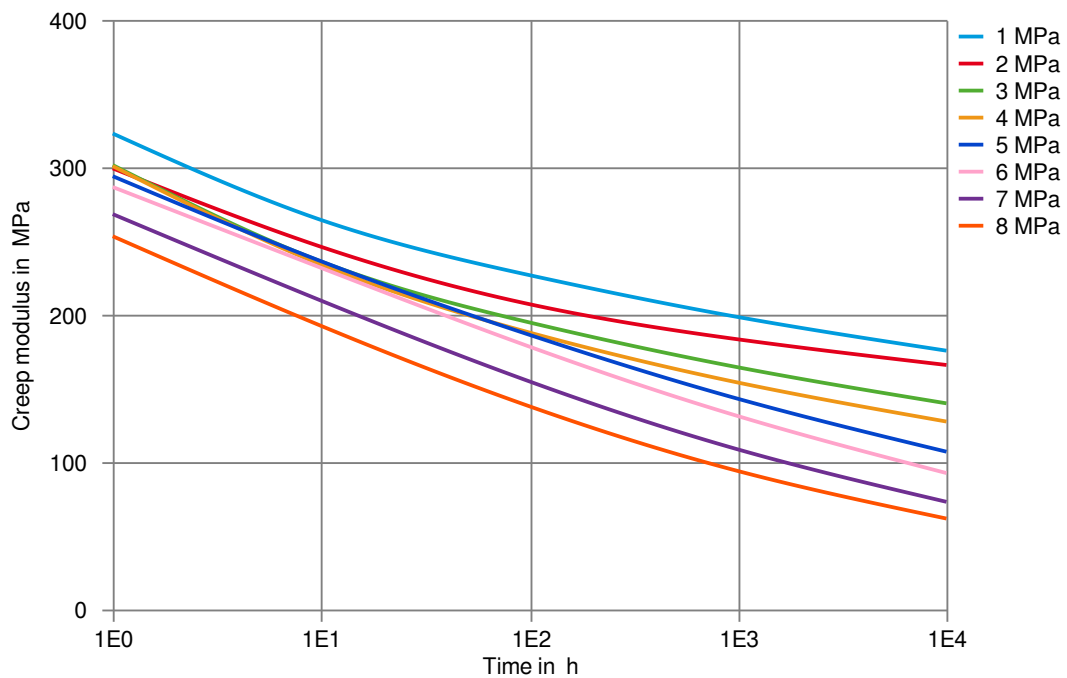
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Stress-strain (isochronous) 23°C



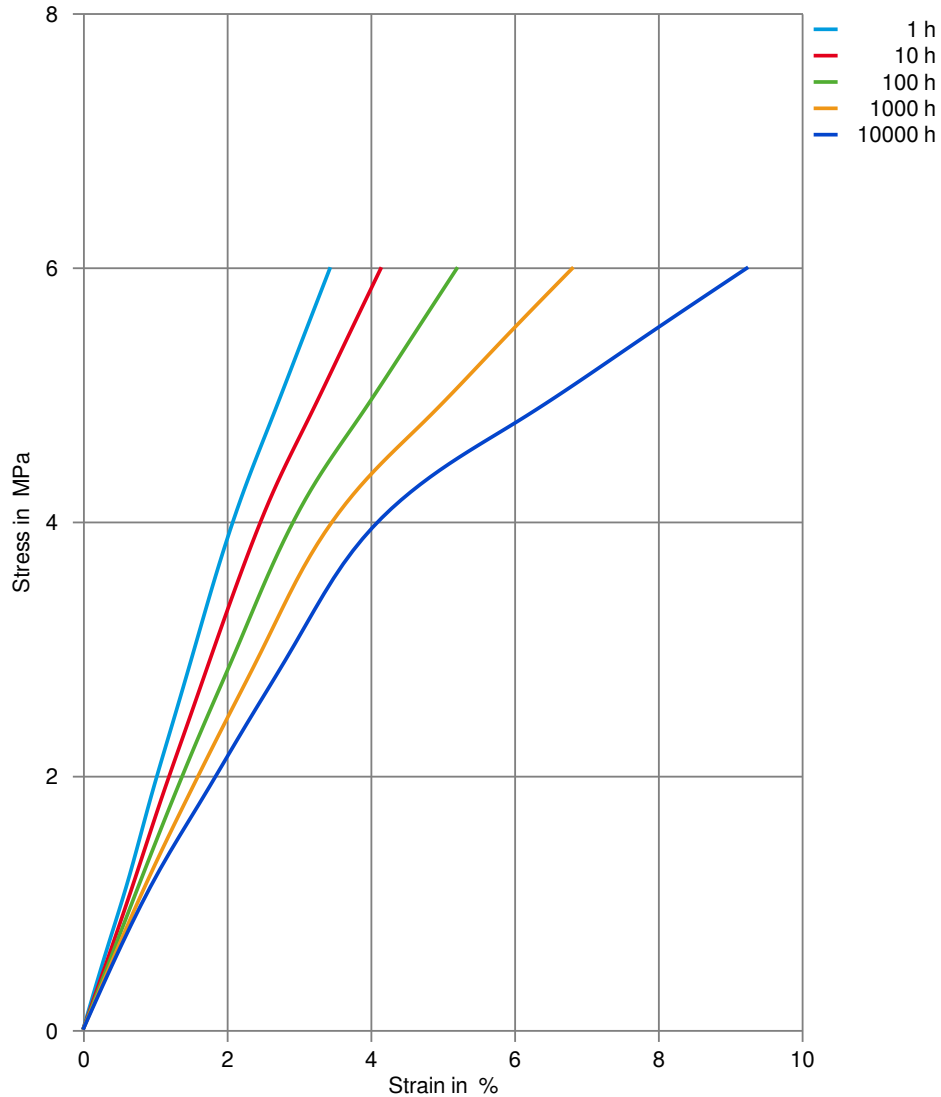
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Creep modulus-time 23°C



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Stress-strain (isochronous) 40°C



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Creep modulus-time 40°C

