

# GUR® 4170 ECO-B

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UHMW-PE powder grade

GUR® 4170 ECO-B incorporates >99% of bio-circular ethylene by weight in the finished product through mass balance allocation. The product is a drop-in replacement to the standard grade with the same performance and processing properties and contributes to the displacement of virgin fossil fuel resources. The biobased source and allocated content in the product are certified according to ISCC PLUS mass balance approach.

## Product information

Resin Identification	(PE-UHMW)	ISO 1043
Part Marking Code	>(PE-UHMW)<	ISO 11469
Average molecular weight	1.02E7 g/mol	Margolies' equation
Average particle size, d50	120 µm	laser scattering

## Rheological properties

Viscosity number	4200 cm <sup>3</sup> /g	ISO 307, 1628
Intrinsic viscosity	3400	ISO 307, 1628

## Typical mechanical properties

Tensile modulus	570 MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	19 MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	15 %	ISO 527-1/-2
Tensile stress at 50% strain	19 MPa	ISO 527-1/-2
Tensile stress at break, 50mm/min	40 MPa	ISO 527-1/-2
Nominal strain at break	360 %	ISO 527-1/-2
Elongational stress F, 150/10	0.68 MPa	ISO 21304-2
Charpy double notched impact strength, 23°C	170 kJ/m <sup>2</sup>	ISO 21304-2
Poisson's ratio	0.47 <sup>[C]</sup>	
Shore D hardness, 15s	60	ISO 48-4 / ISO 868

[C]: Calculated

## Tribological properties

Wear by sandslurry method (based on GUR 4120=100)	80
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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

## Electrical properties

Volume resistivity	1E12 Ohm.m	IEC 62631-3-1
Surface resistivity	1E12 Ohm	IEC 62631-3-2

## Physical/Other properties

Density	920 kg/m <sup>3</sup>	ISO 1183
Bulk density	450 kg/m <sup>3</sup>	ISO 60

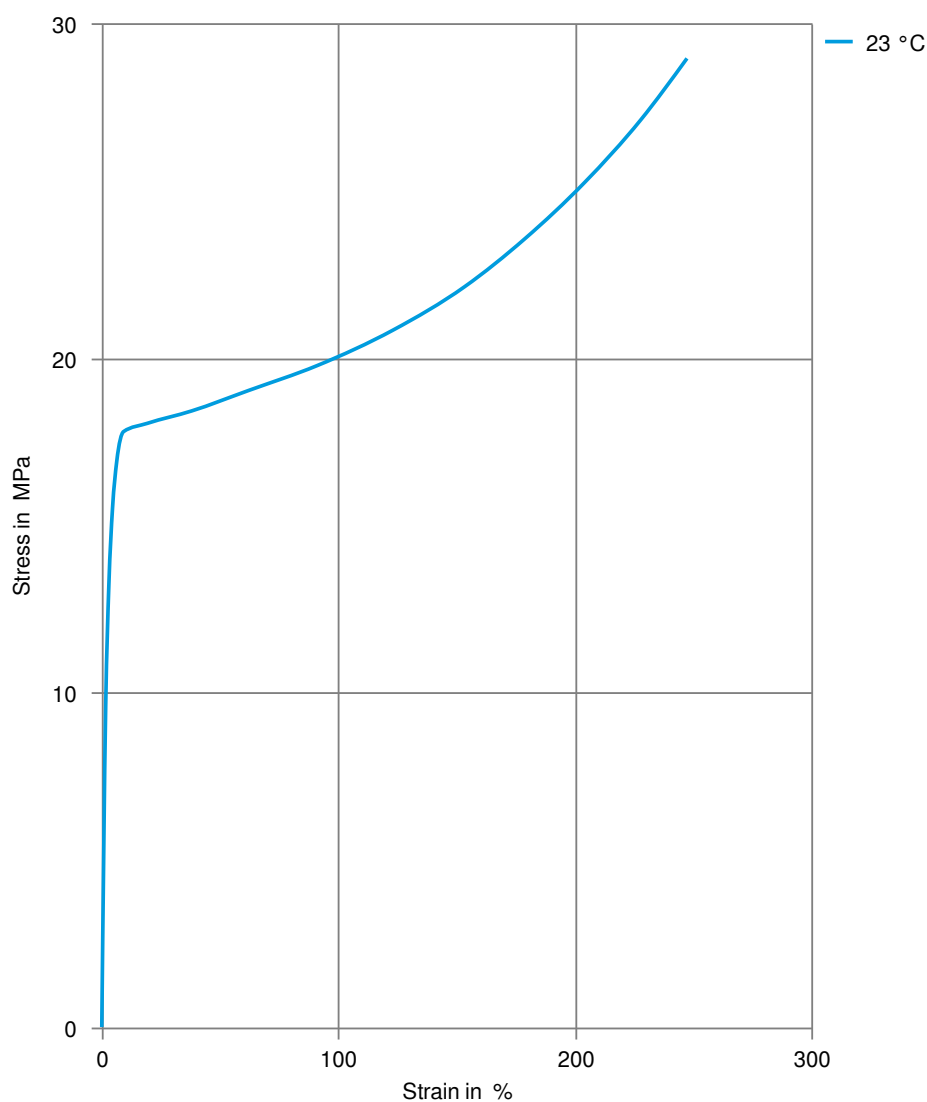
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## Characteristics

Processing	Ram Extrusion, Other Extrusion, Transfer Moulding, Compression moulding
Delivery form	Powder
Special characteristics	High impact or impact modified, Hydrolysis resistant, Low wear / Low friction, Chemical resistant
Sustainability	Bio-Content

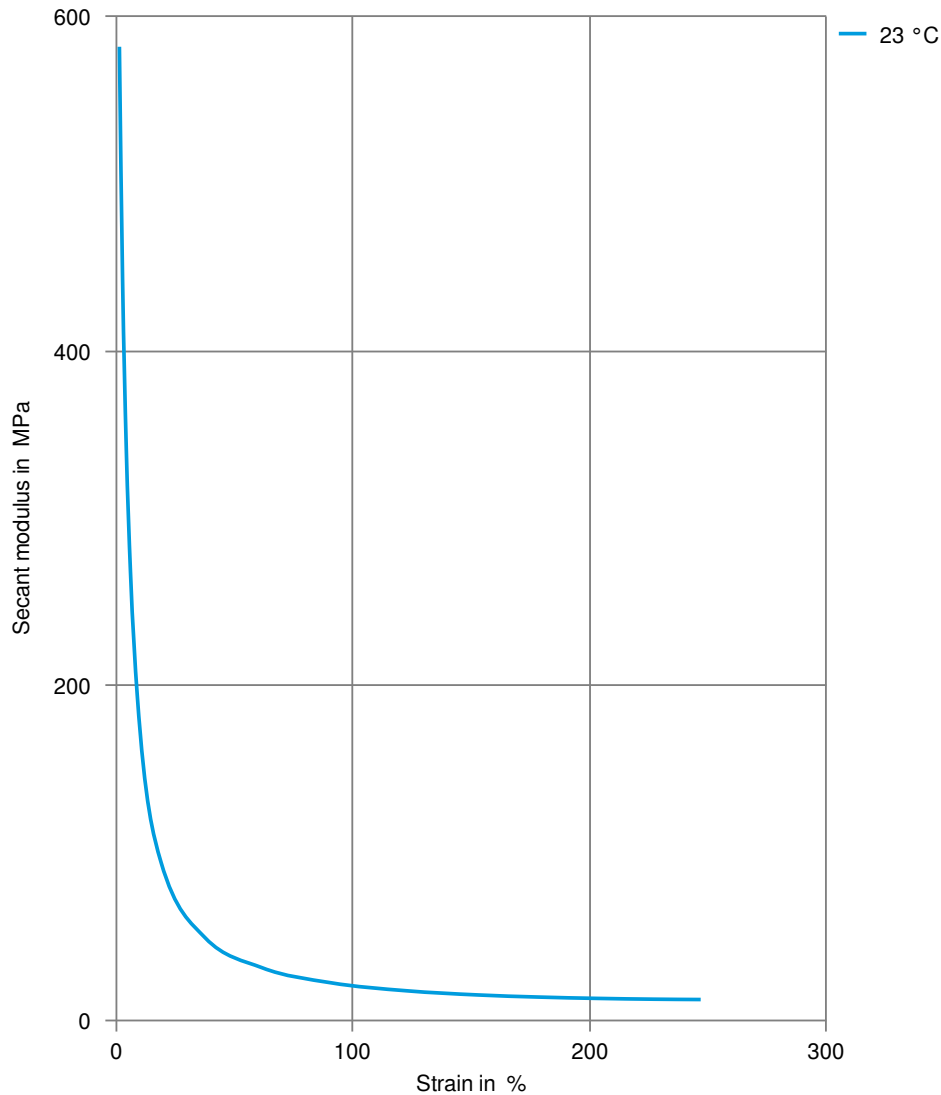
## Stress-strain



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## Secant modulus-strain



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