Celanese
The chemistry inside innovation™

GHR® 8020 ECO-B

GUR®

Melt processable HMW-PE powder grade: coarse particle

GHR® 8020 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-HMW)		ISO 1043
Part Marking Code	>(PE-HMW)<		ISO 11469
Average molecular weight	400000	g/mol	Margolies' equation
Average particle size, d50	220	µm	laser scattering

Rheological properties

Melt mass-flow rate	3.5	g/10min	ISO 1133
Melt mass-flow rate, Temperature	190	°C	
Melt mass-flow rate, Load	21.6	kg	
Viscosity number	400	cm^3/g	ISO 307, 1628
Intrinsic viscosity	400		ISO 307, 1628

Typical mechanical properties

Tensile modulus	1250	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	26	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	10	%	ISO 527-1/-2
Tensile stress at 50% strain	18	MPa	ISO 527-1/-2
Tensile stress at break, 50mm/min	38	MPa	ISO 527-1/-2
Nominal strain at break	900	%	ISO 527-1/-2
Elongational stress F, 150/10	0.01	MPa	ISO 21304-2
Charpy double notched impact strength, 23°C	35	kJ/m^2	ISO 21304-2
Poisson's ratio	0.44[C]		
Shore D hardness, 15s	63		ISO 48-4 / ISO 868

[C]: Calculated

Tribological properties

Wear by sandslurry method (based on GUR 4120=100)	330		

Thermal properties

Temperature of deflection under load, 1.8 MPa	44	°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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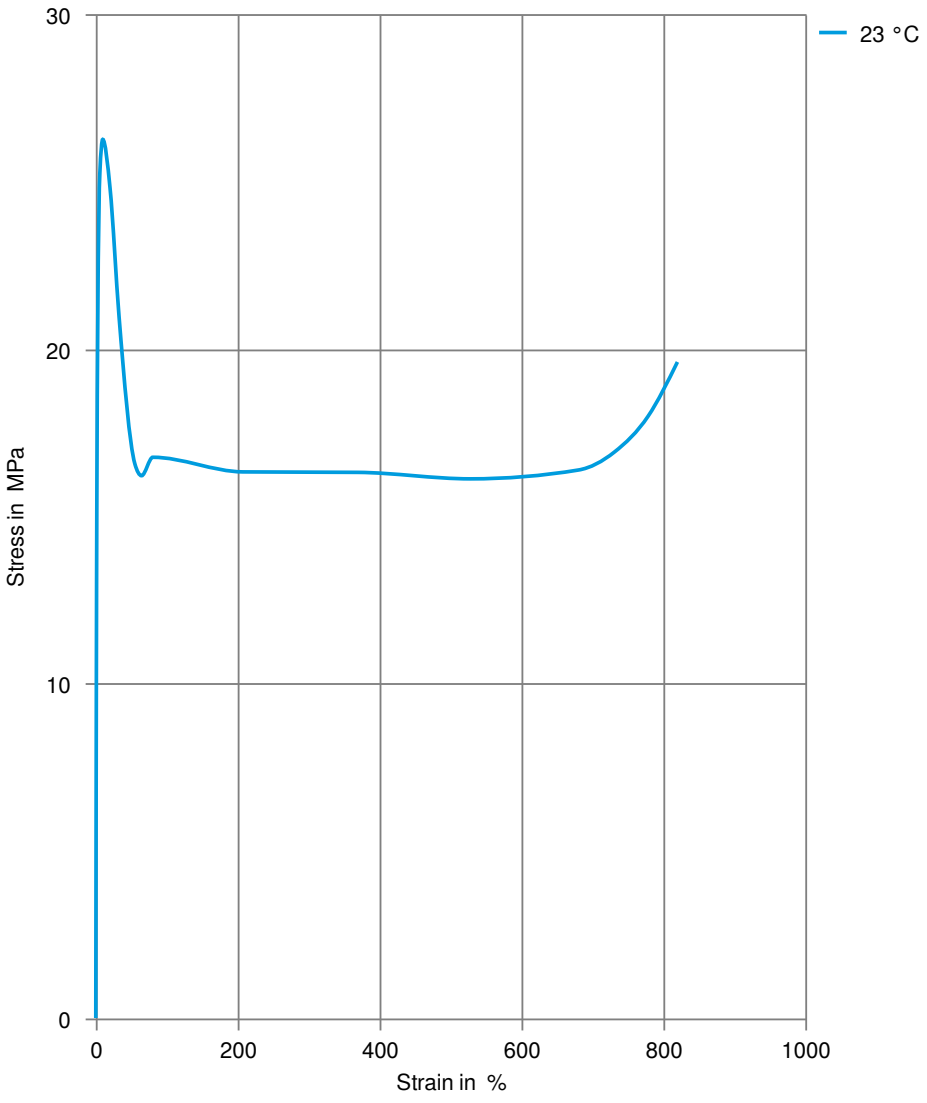
Physical/Other properties

Density	950 kg/m³	ISO 1183
Bulk density	440 kg/m³	ISO 60

Characteristics

Processing	Injection Moulding, Porous Sintering
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