Celanese
The chemistry inside innovation™

GHR® 8020

GUR®

Coarse particle UHMW-PE powder grade, melt processable

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

Physical/Other properties

Density	950	kg/m^3	ISO 1183
Bulk density	440	kg/m^3	ISO 60

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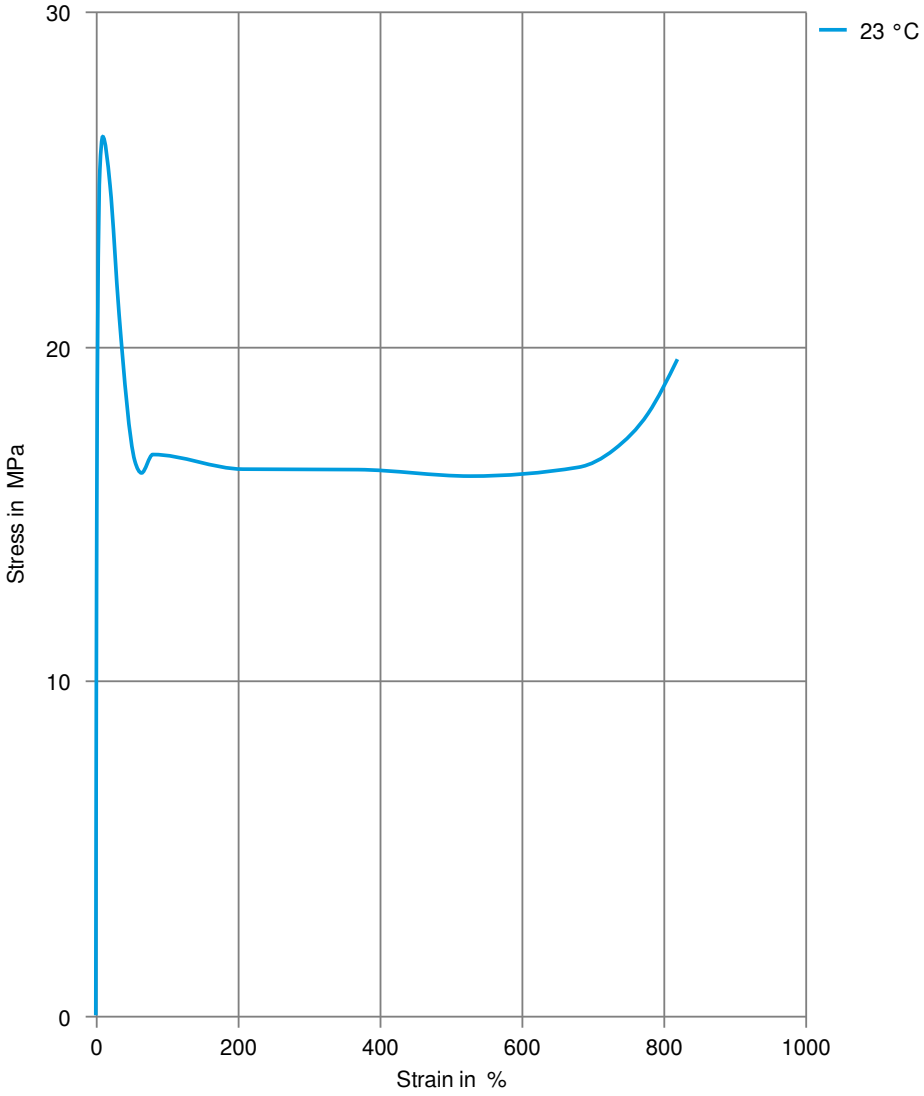
Characteristics

Processing	Injection 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