

GUR[®] 4012 ECO-B

UHMW-PE powder grade
 HMW-PE powder grade for filtration, carbon block

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 | 1.7E6 g/mol | Margolies' equation |
| Average particle size, D50 | 135 µm | laser scattering |

Rheological properties

| | | |
|----------------------------------|-------------------------|---------------------|
| Melt mass-flow rate, Temperature | 190 °C | |
| Melt mass-flow rate, Load | 21.6 kg | |
| Viscosity number | 1100 cm ³ /g | ISO 307, 1157, 1628 |
| Intrinsic viscosity | 1000 | ISO 307, 1157, 1628 |

Typical mechanical properties

| | | |
|---|-----------------------|--------------------|
| Tensile Modulus | 900 MPa | ISO 527-1/-2 |
| Yield stress, 50mm/min | 22 MPa | ISO 527-1/-2 |
| Yield strain, 50mm/min | 9 % | ISO 527-1/-2 |
| Stress at 50% strain | 19 MPa | ISO 527-1/-2 |
| Stress at break, 50mm/min | 42 MPa | ISO 527-1/-2 |
| Nominal strain at break | 550 % | ISO 527-1/-2 |
| Elongational stress, 150/10 | 0.04 MPa | ISO 21304-2 |
| Charpy double notched impact strength, 23°C | 190 kJ/m ² | ISO 21304-2 |
| Shore D hardness, 15s | 60 | ISO 48-4 / ISO 868 |

Tribological properties

| | | |
|---|-----|----------|
| Relative Wear (based on GUR 4120=100), sandslurry method | 140 | Internal |
|---|-----|----------|

Thermal properties

| | | |
|--|-------|-------------|
| Temp. of deflection under load, 1.8 MPa | 41 °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

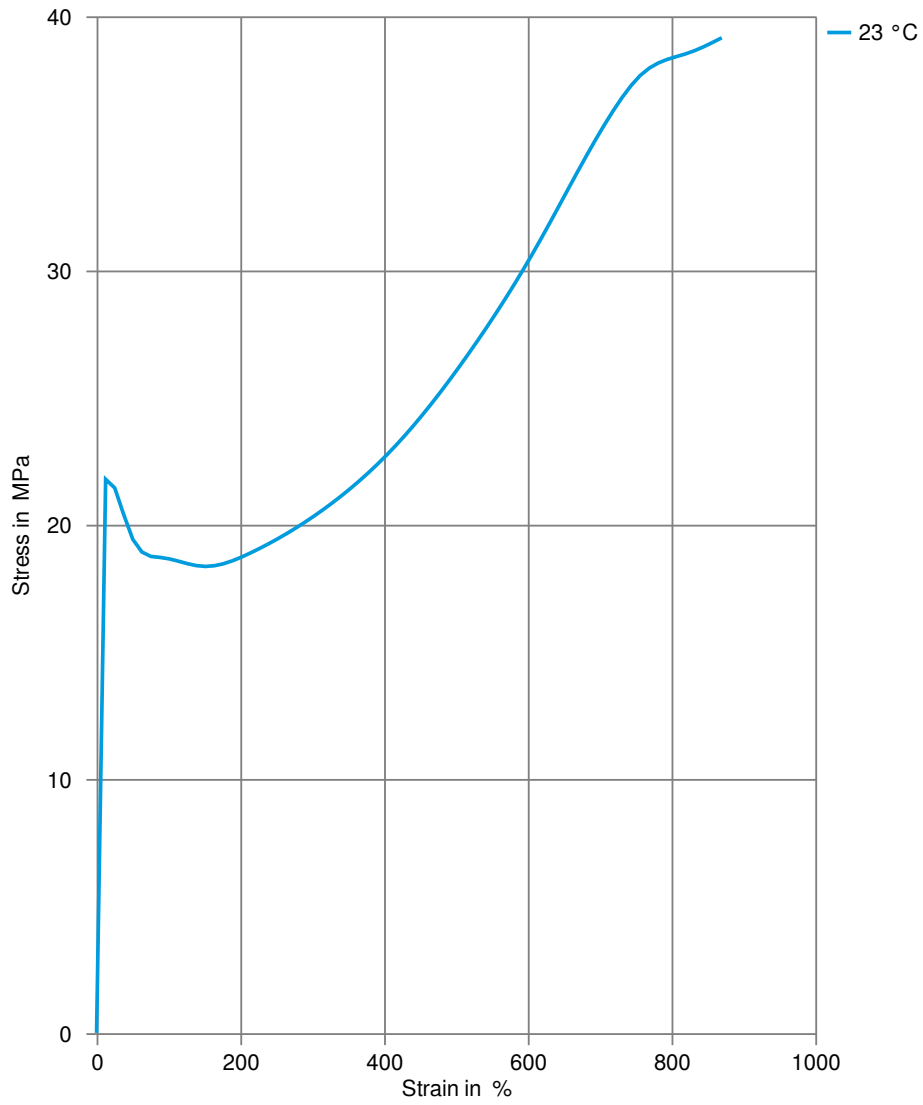
| | | |
|--------------|-----------------------|----------|
| Density | 940 kg/m ³ | ISO 1183 |
| Bulk density | 450 kg/m ³ | ISO 60 |

Characteristics

| | |
|--------------|------------|
| Additives | Biobased |
| Food contact | FDA 21 CFR |

Stress-strain

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Secant modulus-strain

