

GUR[®] 4022 S

GUR[®]

UHMW-PE powder grade

Product information

| | | |
|----------------------------|-------------|---------------------|
| Resin Identification | (PE-UHMW) | ISO 1043 |
| Part Marking Code | >(PE-UHMW)< | ISO 11469 |
| Average molecular weight | 5.4E6 g/mol | Margolies' equation |
| Average particle size, d50 | 115 µm | laser scattering |

Rheological properties

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|---------------------|-------------------------|---------------|
| Viscosity number | 2600 cm ³ /g | ISO 307, 1628 |
| Intrinsic viscosity | 2200 | ISO 307, 1628 |

Typical mechanical properties

| | | |
|---------------------------------------------|-----------------------|--------------------|
| Tensile modulus | 800 MPa | ISO 527-1/-2 |
| Tensile stress at yield, 50mm/min | 21 MPa | ISO 527-1/-2 |
| Tensile strain at yield, 50mm/min | 13 % | ISO 527-1/-2 |
| Tensile stress at 50% strain | 21 MPa | ISO 527-1/-2 |
| Tensile stress at break, 50mm/min | 44 MPa | ISO 527-1/-2 |
| Nominal strain at break | 410 % | ISO 527-1/-2 |
| Elongational stress F, 150/10 | 0.28 MPa | ISO 21304-2 |
| Charpy double notched impact strength, 23°C | 160 kJ/m ² | ISO 21304-2 |
| Poisson's ratio | 0.46 ^[C] | |
| Shore D hardness, 15s | 60 | ISO 48-4 / ISO 868 |

[C]: Calculated

Tribological properties

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

Thermal properties

| | | |
|-----------------------------------------------|-------|-------------|
| Temperature 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 |

Physical/Other properties

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

Characteristics

| | |
|-------------------------|---------------------------------------------------------------------------------------------------|
| Processing | Fibre spinning / Gel spinning, Gel Extrusion, Porous Sintering |
| Delivery form | Powder |
| Special characteristics | High impact or impact modified, Hydrolysis resistant, Low wear / Low friction, Chemical resistant |