

Polyetheretherketone
with glass fibers, pearl green

| Physical properties | | Test method | Specimen | Units | Typical value |
|------------------------|------------|-------------|------------|-------------------|---------------|
| Specific gravity | | ISO 1183-3 | | g/cm ³ | 1,56 |
| Water absorption | 23°C / 24h | ISO 62 | ISO 3167 A | % | <0,1 |
| Linear mould shrinkage | | DIN 16742 | ISO 3167 A | % | 0,3-0,7 |
| Flammability behaviour | | UL 94 | 1/16" | | (V-0) |

Mechanical properties at 23°C / 50% rh

| | | | | | |
|----------------------------|-----------------|-------------|------------|-------------------|-----|
| Tensile strength | dry, @50 mm/min | ISO 527 | ISO 3167 A | MPa | 147 |
| Elongation @Fmax. | dry, @50 mm/min | ISO 527 | ISO 3167 A | % | 2 |
| Tensile modulus | dry, @1 mm/min | ISO 527 | ISO 3167 A | GPa | 12 |
| Flexural strength | dry, @10 mm/min | ISO 178 | ISO 3167 A | MPa | 212 |
| Flexural elongation @Fmax. | dry, @10 mm/min | ISO 178 | ISO 3167 A | % | 2,5 |
| Flexural modulus | dry, @2 mm/min | ISO 178 | ISO 3167 A | GPa | 10 |
| Impact strength | dry | ISO 179 1fU | 80x10x4mm | kJ/m ² | 35 |

Thermal properties

| | | | | | |
|--------------------------|---------------------------|-------------|------------|---------------------|-----|
| Vicat softening temp. | VST A | DIN ISO 306 | ISO 3167 A | °C | 325 |
| Continuous service temp. | 20.000 h | IEC 60216 | ISO 3167 A | °C | 250 |
| Service temperature | during lifetime max. 200h | | ISO 3167 A | °C | 280 |
| CLTE, longitudinal | | ISO 11359 | 10x8x4 mm | 10 ⁻⁵ /K | 2,2 |

Electrical properties

| | | | | | |
|-----------------------|---------------------|------------------|------------|---|-------------------|
| Insulation resistance | strip electrode R25 | DIN EN 62631-3-3 | ISO 3167 A | Ω | >10 ¹² |
|-----------------------|---------------------|------------------|------------|---|-------------------|

Main features

Strong, stiff parts. Especially suitable for medical parts, superheated steam sterilizable, hydrolysis resistance Chemically- and hydrolytically- resistant parts, non flammable. High dimensionally stable precision parts, high continuous use temperature.

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Recommended processing parameters

Delivery form & storage

Unless indicated otherwise, the material is delivered as 3mm long pellets in sealed bags on pallets. Preferably storage should be effected in dry and normally temperatured rooms.

Predrying

It is advisable to predry the granules with a suitable dryer immediately before processing. The granule may absorb moisture from the environment.

| Dryer type | Temperature °C | Drying time in h |
|---------------------|----------------|------------------|
| Dehumidifying dryer | 150 | 3 - 6 |
| or | 120 | 6 - 8 |

Recommended processing parameters

In general this product can be processed on conventional injection moulding machines while observing the usual technical guidelines. Any added fibrous materials or fillers may have an abrasive effect. In this case the cylinder and screw should be protected against wear as is usual in the processing of reinforced thermoplastic materials. Lengthy dwell times for the melts in the cylinder should be avoided. Lower the temperatures during interruptions!

| Mold | Melt temperature | Nozzle | Zone 3 | Zone 2 | Zone 1 |
|--------------|------------------|--------------|--------------|--------------|--------------|
| 170 - 200 °C | 390 °C | 360 - 380 °C | 390 - 400 °C | 380 - 390 °C | 360 - 370 °C |

Additional information

During processing, the moisture content should not exceed 0.05%. To avoid internal stresses, a medium to high injection rate should be used. An increase in tool temperature may be helpful. Post-crystallization may lead to warpage at elevated operating temperatures. This can be counteracted by suitable heat treatment. The processing notes provided merely represent a recommendation for general use. Due to the large variety of machines, geometries and volumes of parts, etc., it may be necessary to employ different settings according to the specific application. High-temperature polymers place increased demands on the tool steels employed. Please contact us for further information.