

**LUVOCOM® 1105/GF/20/EM/BK****LUVOCOM®**

High-performance compounds

**Polyetheretherketone  
with glass fibers, black**

| Physical properties                           |                           | Test method   | Specimen        | Units               | Typical value     |
|-----------------------------------------------|---------------------------|---------------|-----------------|---------------------|-------------------|
| Specific gravity                              |                           | ISO 1183-3    |                 | g/cm <sup>3</sup>   | 1,44              |
| Water absorption                              | 23°C / 24h                | ISO 62        | MPTS ISO 3167 A | %                   | <0,1              |
| Linear mould shrinkage                        |                           | DIN 16742     | MPTS ISO 3167 A | %                   | 0,3-0,7           |
| Flammability behaviour                        |                           | UL 94         | 1/16"           |                     | (V-0)             |
| <b>Mechanical properties</b> at 23°C / 50% rh |                           |               |                 |                     |                   |
| Tensile strength                              | dry, @50 mm/min           | ISO 527       | MPTS ISO 3167 A | MPa                 | 145               |
| Elongation at maximum force                   | dry, @50 mm/min           | ISO 527       | MPTS ISO 3167 A | %                   | 2,5               |
| Modulus of elasticity                         | dry, @1 mm/min            | ISO 527       | MPTS ISO 3167 A | GPa                 | 8                 |
| Flexural strength                             | dry, @10 mm/min           | ISO 178       | MPTS ISO 3167 A | MPa                 | 200               |
| Flexural elongation at max. force             | dry, @10 mm/min           | ISO 178       | MPTS ISO 3167 A | %                   | 3                 |
| Flexural modulus                              | dry, @2 mm/min            | ISO 178       | MPTS ISO 3167 A | GPa                 | 8                 |
| Charpy impact strength                        | dry                       | ISO 179 1eU   | 80x10x4mm       | kJ/m <sup>2</sup>   | 50                |
| Charpy impact strength                        | dry                       |               | 80x10x4mm       | kJ/m <sup>2</sup>   | 50                |
| Charpy impact strength                        | -30°C                     | ISO 179 1eU   | 80x10x4mm       | kJ/m <sup>2</sup>   | 45                |
| Charpy impact strength, notched               | dry                       | ISO 179 1eA   | 80x10x4mm       | kJ/m <sup>2</sup>   | 5                 |
| Charpy Impact Strength notched                | -30°C                     | ISO 179 1eA   | 80x10x4mm       | kJ/m <sup>2</sup>   | 4                 |
| <b>Thermal properties</b>                     |                           |               |                 |                     |                   |
| Vicat softening temp                          | VST A                     | DIN ISO 306   | MPTS ISO 3167 A | °C                  | 320               |
| Heat distortion temperature                   | HDT A                     | ISO 75        | molded sample   | °C                  | 285               |
| Continuous service temperature                | 20.000 h                  | IEC 60216     | MPTS ISO 3167 A | °C                  | 250               |
| Service temperature                           | during lifetime max. 200h |               | MPTS ISO 3167 A | °C                  | 280               |
| Coefficient of thermal expansion              |                           | ISO 11359     | 10x8x4 mm       | 10 <sup>-5</sup> /K | 3                 |
| <b>Electrical properties</b>                  |                           |               |                 |                     |                   |
| Insulation resistance strip electrode         | R25                       | DIN IEC 60167 | MPTS ISO 3167 A | Ω                   | >10 <sup>12</sup> |

**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

### Predrying

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

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

### Processing

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

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!

### 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.

### 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.

