

## Technical Data Sheet PTFE GF15

# PTFE + 15 % glass fibre (GF15)

PTFE + 15 % glass fibre (GF15) – glass-fibre-filled PTFE, higher wear/compressive strength than virgin PTFE, tougher than GF25, -200 ... +260 °C

### Typische Eigenschaften

- Higher compressive and wear resistance than virgin PTFE
- Higher elongation/toughness than more highly filled grades (e.g. GF25)
- Reduced creep (cold flow) vs. virgin PTFE
- Very wide temperature range (-200 ... +260 °C)
- Almost universal chemical resistance
- Very low coefficient of friction, self-lubricating
- Non-flammable (UL 94 V-0), good insulator
- Not melt-processable/weldable – machining only

### Typische Industrien

- Sealing technology
- Chemical apparatus and plant engineering
- Plain bearings, sliding and guiding elements
- Pump and valve technology
- Piston rings and compressor construction
- Electrical and insulation technology

|                                              | Testverfahren | Einheit              | Wert               |
|----------------------------------------------|---------------|----------------------|--------------------|
| <b>Physical Properties</b>                   |               |                      |                    |
| Density                                      | ISO 1183      | g / cm <sup>3</sup>  | 2.20               |
| Water absorption                             | ISO 62        | %                    | < 0.04             |
| Colour                                       |               |                      | white              |
| <b>Mechanical Properties</b>                 |               |                      |                    |
| Tensile strength                             | ISO 527       | MPa                  | ~ 20               |
| Elongation at break                          | ISO 527       | %                    | 250–350            |
| Hardness                                     | ISO 868       | Shore D              | 58–62              |
| Coefficient of friction (against steel)      | DIN 53375     |                      | ~ 0.15             |
| <b>Thermal Properties</b>                    |               |                      |                    |
| Service temperature                          |               | °C                   | -200 ... +260      |
| Coefficient of thermal expansion (25–200 °C) | DIN 52612     | 10 <sup>-5</sup> / K | ≈ 12               |
| Thermal conductivity                         | DIN 52612     | W / (m·K)            | ≈ 0.30             |
| <b>Electrical Properties</b>                 |               |                      |                    |
| Dielectric strength                          | IEC 60243-1   | kV / mm              | ~ 16               |
| Volume resistivity                           | IEC 60093     | Ω·cm                 | ~ 10 <sup>14</sup> |
| Surface resistivity                          | IEC 60093     | Ω                    | ~ 10 <sup>16</sup> |

|                       | Testverfahren | Einheit | Wert                |
|-----------------------|---------------|---------|---------------------|
| <b>Fire Behaviour</b> |               |         |                     |
| Flammability          | UL 94         |         | V-0 (non-flammable) |
| Oxygen index (LOI)    | ISO 4589      | %       | > 95                |

PTFE + 15 % glass fibre (GF15) is a glass-fibre-filled PTFE compound with a lower filler content than GF25 - giving higher elongation and toughness with a somewhat smaller improvement in compressive and wear resistance. The values stated are typical characteristic values of a PTFE GF15 compound; they serve as an aid to material selection and are not a legally binding warranty of specific properties and may vary between manufacturers. The glass-fibre content improves compressive strength, wear and creep behaviour compared with virgin PTFE and can reduce chemical resistance to hydrofluoric acid and strong hot alkalis. PTFE must not be overheated (decomposition from approx. 260 °C releasing harmful gases).

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