

Application purpose and characteristics

For heavy-duty plain bearings, guide- and sealing elements, such as piston rings for non-lubricated compressors with spring preload characteristics. Superior to all PTFE HP grades regarding compressive strength, cold flow behaviour, rigidity, and modulus of bending elasticity. Very high wear resistance and low coefficient of friction, anti-static.

Product description

Material name, long description	Polytetrafluorethylene
Material name, short description	PTFE
Compound	PTFE + long carbon fibres
Material Code	PTFE HP117.013-00
Density	2.05 - 2.13 g/cm ³
Color	Black

Mechanical properties

Tensile strength	Test value: 14 MPa Test norm: ISO 527-1 Test parameter: Cross direction, test speed 50 mm/min
Elongation at break	Test value: 25 % Test norm: ISO 527-1 Test parameter: Cross direction, test speed 50 mm/min
Residual Deformation After 24 h	Test value: < 2 % Test norm: ASTM D 621 Test parameter: Cross direction
Deformation under load	Test value: < 3 % Test norm: ASTM D 621 Test parameter: P=13.7 N/mm ² , 24 h, cross direction +23 °C
Shore hardness	Test value: 65 Shore D Test norm: ISO 868
Static friction coefficient	Test value: 0.13 Test norm: ASTM D 3702
Sliding wear	Test value: 0.025 µm/h Test norm: ASTM D 3702 Test parameter: PV=0.7 N/mm ² * m/s
Dynamic friction coefficient	Test value: 0.20 Test norm: ASTM D 3702 Test parameter: PV=0.7 N/mm ² * m/s

Thermal properties

Min. operating temperature	Test value: -260 °C
Max. operating temperature long term	Test value: 280 °C
Coefficient of linear thermal expansion	Test value: $8 \cdot 10^{-5}/^{\circ}\text{C}$ Test norm: ASTM D 696 Test parameter: 25 - 95 °C