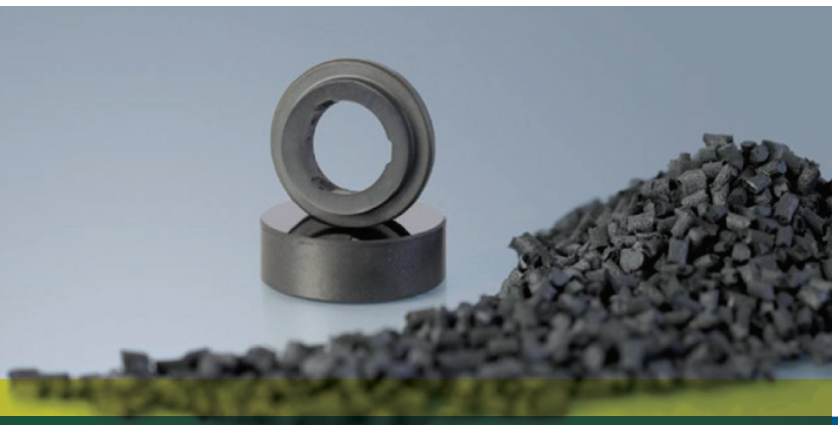


Product information

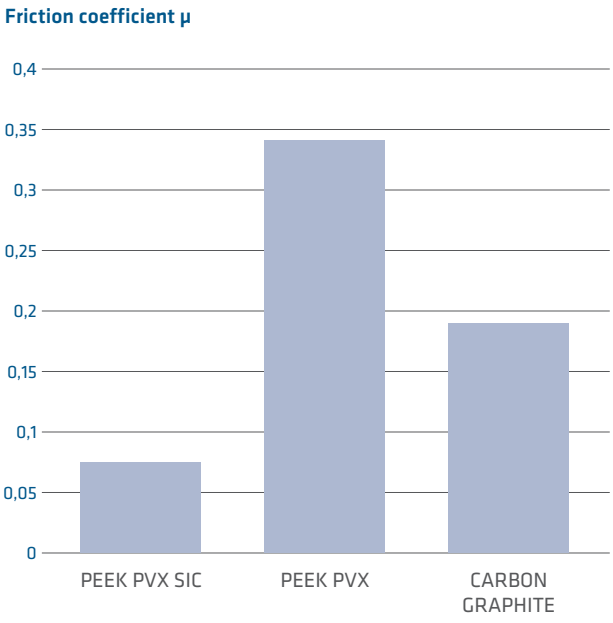
Business Case – Compound with nanoceramics

Where requirements in the pump industry are particularly tough, sintered ceramic slide bearings made from silicon carbide (SiC) are used. There is a need for high-performance but at the same time cost-effective alternatives to these expensive ceramic components. Ensinger reinforces high-performance plastics with innovative ceramic fillers made from silicon carbide and thereby combines the advantages of both materials: very good tribological properties as well as easy shaping using an injection-moulding process.

The new polymer composite for slide bearing applications enables manufacturers to produce energy-efficient, affordable slide bearings which have a significantly lower friction coefficient than conventional graphite slide bearings.

Our new Ensinger TECACOMP PEEK TRM PVX SiC grey compound is optimised for industrial bearing applications in pump and plant technology and process engineering. The base polymer PEEK has been tribologically optimised with the fillers PTFE and graphite. Carbon fibre additives ensure improved wear properties. The composite also contains fillers made from silicon carbide, by means of which the tribological performance can be further improved compared to other plastic compounds with modified sliding properties. SiC stands out for high

Illustration of performance comparison with TECACOMP TRM PVX



corrosion and wear resistance. In addition, the material has good chemical and thermal resistance.

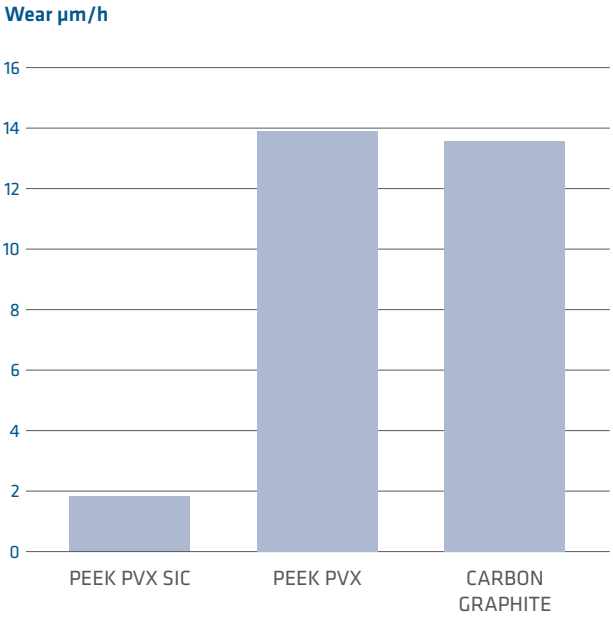
Slide bearings made from Ensinger TECACOMP PEEK TRM PVX SiC grey can either be used with water lubrication or in dry-running conditions. The long-term service temperature is 260° C. The material is fundamentally suitable for displacement pumps, with the outstanding frictional properties particularly coming into their own in axial piston pumps.

Properties

→ Very low friction coefficients
→ Minimal wear
→ Good corrosion resistance
→ Suitable for all designs
→ Excellent dry-running properties
→ Chemical resistance

Application

→ Axial sliding element
→ Sealing rings



Summary

The new TECACOMP formulation PEEK TRM PVX SiC grey has been tribologically optimised and is enhanced with silicon carbide filler; in addition, carbon fibre additives offer improved wear properties. Alongside a low friction coefficient, minimal wear and chemical and thermal resistance, its characteristics also include a high degree of design freedom.

Contact

Ensinger GmbH
Compounds
Rudolf-Diesel-Straße 8
71154 Nufringen
Phone +49 7032 819 0
compounds@ensingerplastics.com
ensingerplastics.com