Advanced bearing material for grease and oil lubricated applications under high loads

**Challenge**

Some particular greased or fluid lubricated applications need to be able to endure for long periods very high loads at elevated temperatures. These operating conditions are reducing significantly the service life when standard materials are used, inducing a risk of material seizure before the application end of life.

**Solution**

GLYCO® 95 is based on the high performance thermoplastic material PEEK, which has excellent mechanical properties maintained at high temperatures. In combination with other additives, very high wear resistance and load carrying capacity can be reached.

An increased overlay thickness of 30-80 µm offers additional wear reserve, extending service life compared to PTFE-based materials. Temperature ranges from -150 to 250 ºC, higher than common thermoplastics.

**Key Features**

- Usable under severely loaded fluid lubricated or greased conditions
- High pv-value
- Very high wear resistance
- Very high load capacity
- High thermal strength
- Rotating, oscillating and axial motion possible

**Benefit Details**

- **High Load capacity**
  - static: max. 250 MPa
  - dynamic: max. 120 MPa

- **High wear resistance as well greased as oil lubricated under heavy load**
  - Wear rate < 0.25 µm/km at 60 MPa at 0.125 m/s in greased rotation*
  - pv max = 40 MPa m/s under lubricated conditions in rotation**

- **Friction performances**
  - Grease lubricated: from 0.06 to 0.09

**Additional Information**

GLYCO® 95 is a three layer composite material. A porous tin bronze sinter structure is applied on a steel back, which is impregnated with a PEEK sliding material with friction improving and wear reducing additives. An overlay of the same sliding material is located above the filled bronze structure.

Maximum sliding velocity of 2.5 m/s under greased operation.

In oil lubricated applications, higher values up to 10 m/s or more depending on lubricant supply conditions are possible.

**Applications:**
- fluid lubricated like pumps, shock absorbers, EGR-valves
- industrial applications

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