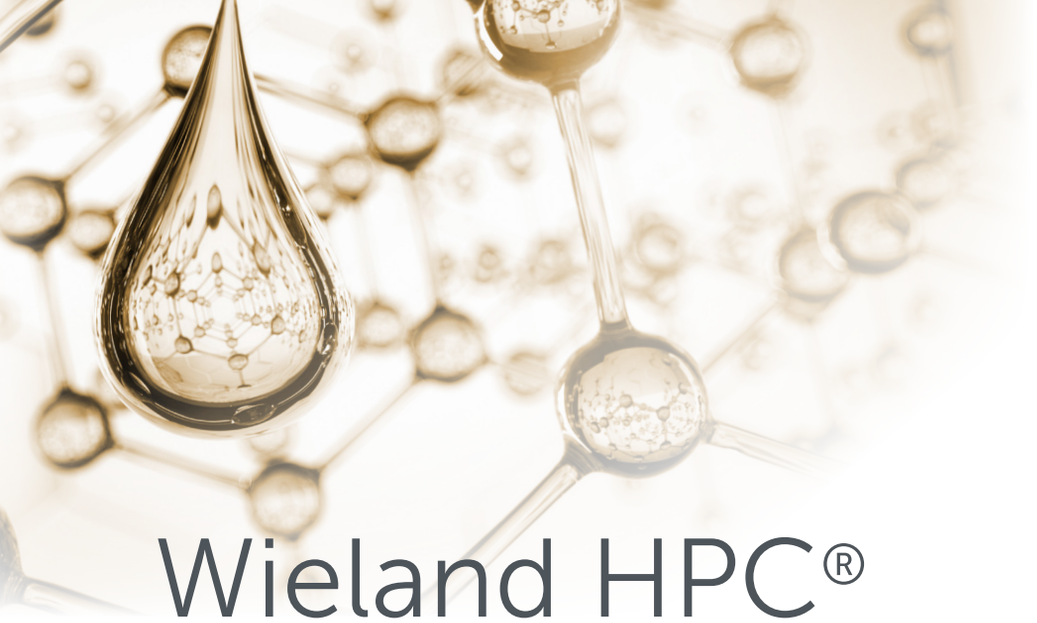


wieland

PFAS Free

Wieland HPC®

HPC – High performance coating

Wieland HPC is an extremely wear-resistant polymer coating.
This high-temperature-resistant composite system offers excellent wear and friction properties.

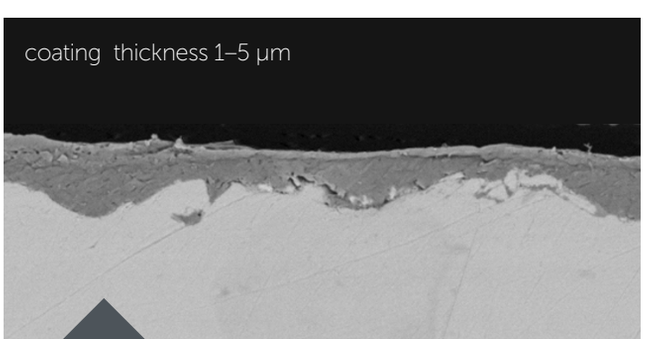
Properties

The polymer layer ensures low friction and wear values during the running-in phase by separating the sliding surfaces and increasing the load-bearing capacity. This results in a stable operating phase.

The coating also demonstrates excellent emergency running properties, extending the overall system's life-span under challenging tribological conditions.

Application

Material	Metals
Layer thickness	1–5 µm
Pretreatment	Application-specific
Temperature range permanent	–196 °C to 300 °C
Temperature range short-term	350 °C
Process temperature	200 °C



Structure

The coating is composed of a polymer with a highly stable lattice structure. Due to its high degree of cross-linking, the coated component is well protected against external influences, e.g. chemicals.

Comparison with high-strength wear coatings

– The high ductility reliably prevents the formation of microcracks in the coating under bending load

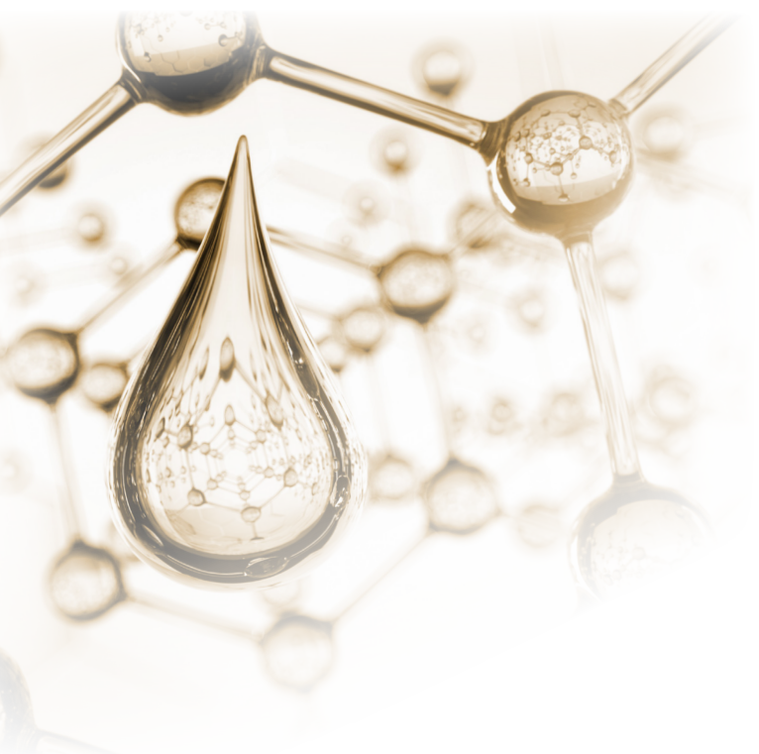
– The high-energy surface ensures good lubricant coverage of the coated component

– The coating of the components does not require a vacuum,therefore short process times can be realized

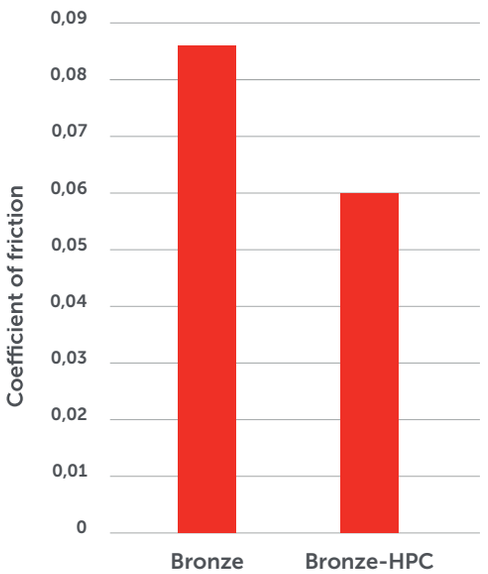
– Application does not require a new design due to the thinfilm application

Technical properties

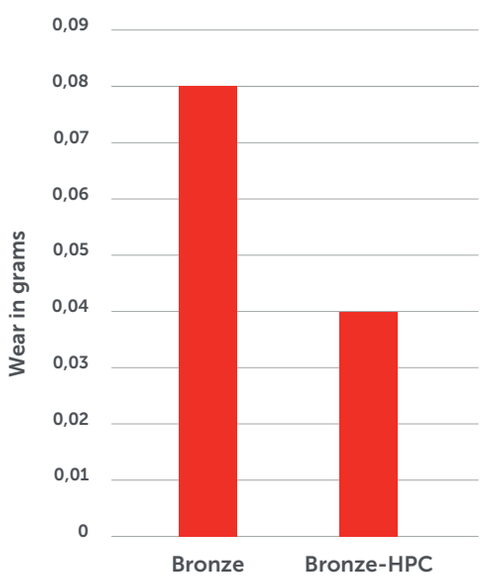
- **High Strength Across a Wide Temperature Range:** Maintains exceptional strength from 170°C to +300°C, with short-term resistance up to +350°C.
- **Tensile Strength:** ≈ 90 MPa.
- **Elastic Modulus:** ≈ 3,200 MPa.
- **Shear Strength**: ≈ 85 MPa.
- **Permissible Surface Pressure:** ≈ 400 MPa.
- **Low Water Absorption:** ≈ 0.32% after 24 hours.
- **No Outgassing in High Vacuum:** No significant outgassing under high vacuum conditions.
- **Reduced Wear:** Achieves half the wear compared to bronze
- **Suitable for sub-cooled Installation:**
- **PFAS-Free:** Compliant with future EU regulations, ensuring long-term sustainability.



Friction values endurance test



Wear endurance test



Endurance test 6 hours at a surface pressure of 9 MPa / 1m/s
Rotary tribometer (specimen: ring/disk)

Do you want to learn more about Wieland HPC?
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