

# STASSKOL



## SK 904

Sealing material for high temperatures and pressures in lubricated applications

SK904 is a sealing material based on Polyetheretherketone (PEEK) and it is widely used in lubricated service. A typical application is the compression of gases like Hydrogen, Nitrogen and Hydrocarbons mostly by reciprocating systems. The high content of Carbon fibers ensures high service life-times, increased mechanical properties and an improved chemical resistance.

## TRIBOLOGICAL PROPERTIES

The tribological properties are defining the wear behavior of the material. The wear rate (k) and friction coefficient ( $\mu$ ) of SK904 are identified by tribological characterization.

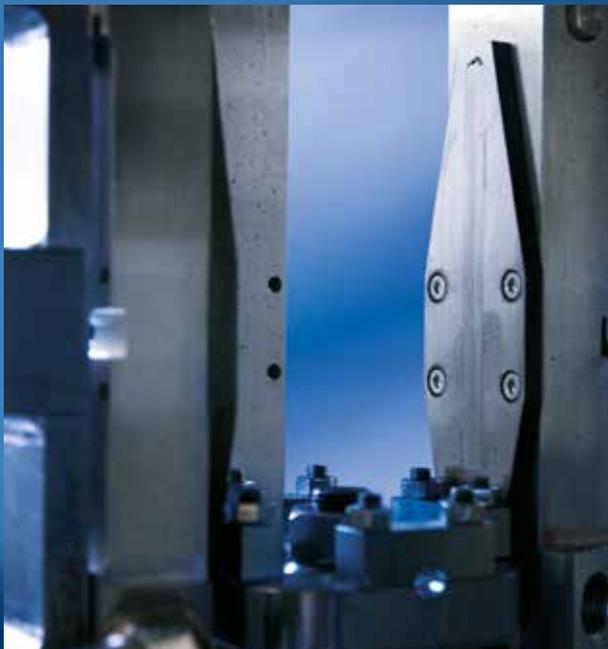
Under Hydrogen	
Wear rate:	$k = 2 \cdot 10^{-7} \text{ mm}^3/\text{Nm}$
Friction coefficient:	$\mu = 0.06$

The following conditions were applied during the test of SK904:

Gas:	Hydrogen
Average velocity:	2.7 m/sec
Pressure:	20 bar
Dew point:	-90 °C
Counter surface:	steel with tungsten carbide coating
Lubricant:	none

The lower the wear rate the higher are the wear resistance and the expected service life-time at the field application.

STASSKOL provides state-of-the-art equipment for tribological characterizations under reciprocating and rotating movement. An unique reciprocating tribometer was used to investigate the wear behavior of SK904.



The material performance strongly depends on the test conditions. Therefore measurements at the parameters of the customer's application are recommended. Please use the characterization and development capabilities of STASSKOL.

## MECHANICAL PROPERTIES

SK904 shows an increased stiffness due to the high filler content. The mechanical properties have been investigated using a tensile testing machine under standard (DIN EN ISO527-1) conditions.

Elastic modulus:	7,470 MPa
Tensile strength:	121 MPa
Elongation at break:	4.6 %
Density:	1.38 g/cm <sup>3</sup>
Hardness:	87.0 Shore D

## CUSTOMER GUIDELINE

### Operating Conditions:

- Lubricated
- Pressure up to 400 bar
- Temperature up to 150 °C
- Average velocity up to 4.5 m/sec
- Dew point down to "bone-dry"

### References:

- Refinery applications
- Hydrogen compressors
- Natural gas stations
- Biogas applications

Please contact STASSKOL to get additional information about SK904. You will be supported by choosing the best sealing material according to the operating conditions of your application.

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