



## SK 907

### Sealing material (PEEK) for lubricated and dry-running applications

SK907 is a sealing material based on Polyetheretherketone (PEEK) and it is widely used in lubricated service as well as in dry-running systems (e.g. pressure breakers, backup rings). A typical application is the compression of gases like Hydrogen, Nitrogen and Hydrocarbons mostly by reciprocating systems. An optimized content of Carbon fibers, Polymeric fillers and Graphite ensures high service lifetimes, 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 SK907 are identified by tribological characterization.

Under Hydrogen	
Wear rate:	$k = 1.9 \cdot 10^{-7} \text{ mm}^3/\text{Nm}$
Friction coefficient:	$\mu = 0.10$

The following conditions were applied during the test of SK907:

Gas:	Hydrogen
Average velocity:	2.7 m/sec
Pressure:	20 bar
Dew point:	-70 °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 SK907.



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

SK907 shows an increased stiffness due to the high filler content and a good flexibility due to the optimized formulation and a special processing method. The mechanical properties have been investigated using a tensile testing machine under standard (DIN EN ISO 527-1) conditions.

Elastic modulus:	5,450 MPa
Tensile strength:	66.4 MPa
Elongation at break:	3.2 %
Density:	1.46 g/cm <sup>3</sup>
Hardness:	85.2 Shore D

## CUSTOMER GUIDELINE

### Operating Conditions:

Lubricated or dry-running service  
Pressure up to 350 bar  
Temperature up to 150 °C  
Average velocity up to 4.5 m/sec  
High and low dew points

### References:

Refinery applications  
Hydrogen compressors  
Natural gas stations  
Biogas applications

Please contact STASSKOL to get additional information about SK907. You will be supported by choosing the best sealing material according to the operating conditions of your application.

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