

# STASSKOL



## SK 401

Sealing material for Hydrocarbon gases with high dew points in dry-running applications

SK401 is a sealing material based on Polytetrafluorethylene (PTFE) and it is widely used at **dry-running** compressor services. Typical applications are the compression of Hydrocarbon gases as well as the compression of Hydrogen and Ammonia at industrial processes, mostly by reciprocating systems. An optimized content of fillers and lubricants ensures high service life-times and increased mechanical properties, while keeping an outstanding chemical resistance against aggressive media.

## TRIBOLOGICAL PROPERTIES

The tribological properties are defining the wear behavior of the material. The wear rate (k) and friction coefficient ( $\mu$ ) of SK401 are identified by tribological characterization.

Under Hydrogen	
Wear rate:	$k = 2.8 \cdot 10^{-7} \text{ mm}^3/\text{Nm}$
Friction coefficient:	$\mu = 0.12$

The following conditions were applied during the test of SK401:

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 SK401.



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

SK401 shows an increased stiffness in combination with an excellent flexibility due to the optimized filler content. The mechanical properties have been investigated using a tensile testing machine under standard (DIN EN ISO 527-1) conditions.

Elastic modulus:	1,160 MPa
Tensile strength:	17.8 MPa
Elongation at break:	280 %
Density:	2.10 g/cm <sup>3</sup>
Hardness:	63.7 Shore D

## CUSTOMER GUIDELINE

### Operating Conditions:

Dry-running service  
Pressure up to 350 bar  
Temperature up to 150 °C  
Average velocity up to 4.5 m/sec  
High dew points

### References:

Hydrogen compression  
Compression of Ammonia  
Flare gas compression  
Process gases at chemical plants

Please contact STASSKOL to get additional information about SK401. You will be supported by choosing the best sealing material according to the operating conditions of your application.

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