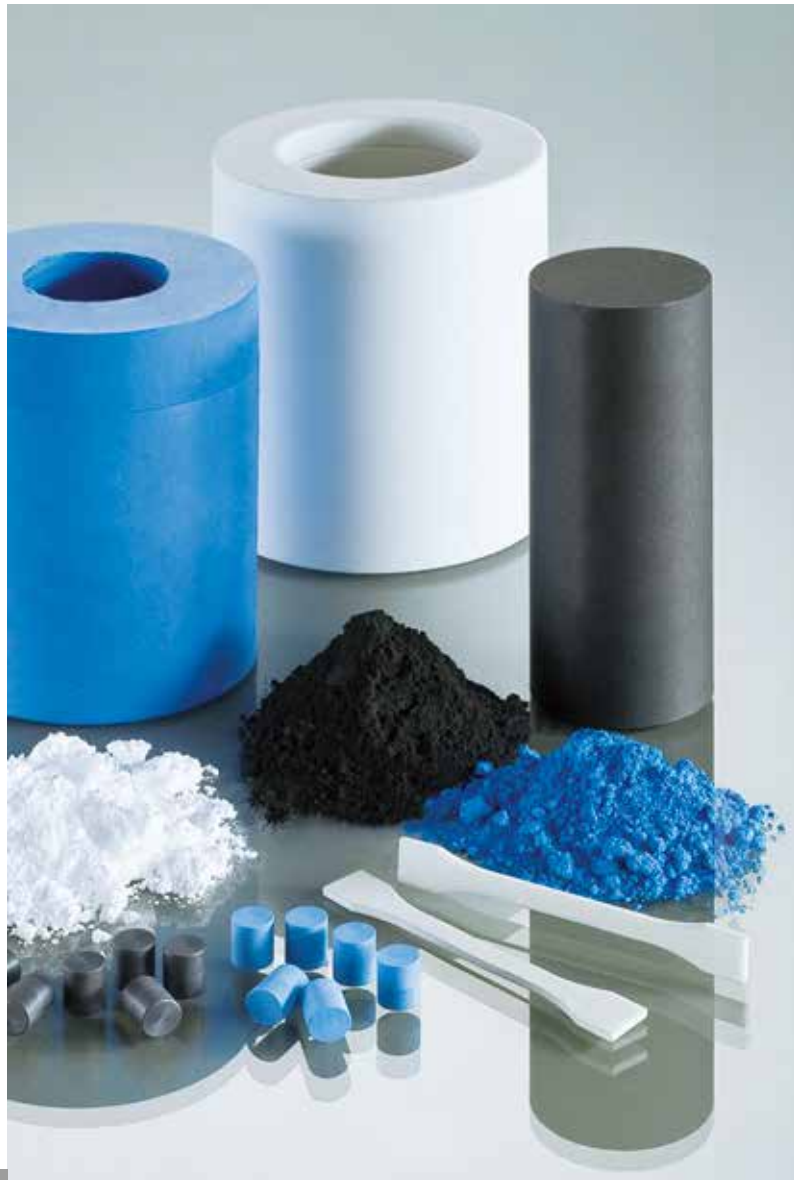
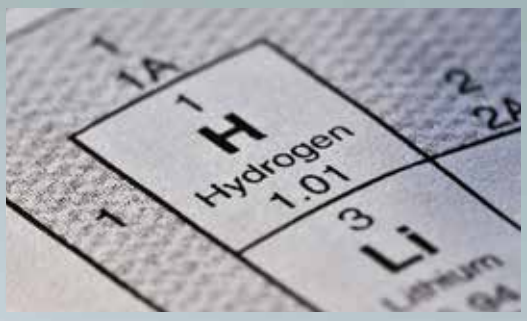
STASSKOL





SK 801

Sealing material for bone-dry Hydrogen in non-lubricated applications

SK801 is a sealing material based on Polytetrafluorethylene (PTFE) and it is widely used in dry-running service. A typical application is the compression of gases like Hydrogen, Nitrogen and Hydrocarbons mostly by reciprocating systems. The optimized content of Carbon fibers, Polymeric fillers and Lubricants as well as the special processing ensure 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 (μ) of SK801 are identified by tribological characterization.

Under Hydrogen	
Wear rate:	$k = 3 \cdot 10^{-8}$ mm³/Nm
Friction coefficient:	μ = 0.07

Under Nitrogen	
Wear rate:	$k = 3 \cdot 10^{-8}$ mm³/Nm
Friction coefficient:	μ = 0.05

The following conditions were applied during the test of SK801:

Gas:	Hydrogen, Nitrogen
Average velocity:	2.7 m/sec
Pressure:	20 bar
Dew point:	-80 °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 SK801.

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

SK801 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:	1,720 MPa
Tensile strength:	21.2 MPa
Elongation at break:	13 %
Density:	1.90 g/cm³
Hardness:	69.4 Shore D

Customer Guideline

Operating Conditions:

Dry-running
Pressure up to 200 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 SK801. You will be supported by choosing the best sealing material according to the operating conditions of your application.

STASSKOL GmbH
Maybachstrasse 2
39418 Stassfurt
Germany

☏ +49-3925-288-100
🖷 +49-3925-288-105

✉ info@stasskol.de
🌐 www.stasskol.de

STASSKOL Inc.
19911 Morton Road
Katy, Texas 77449
USA

☏ +1-713-244-5050

✉ info@stasskol.com