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New Sealing Material
S-ECOPUR®

ECONOMOS®

quality sealing solutions

ECONOMOS®

a world leader in the manufacture
of high performance materials for
sealing solutions presents

S-ECOPUR®

for solving sticky (underlubricated, dry
operation) sealing problems.

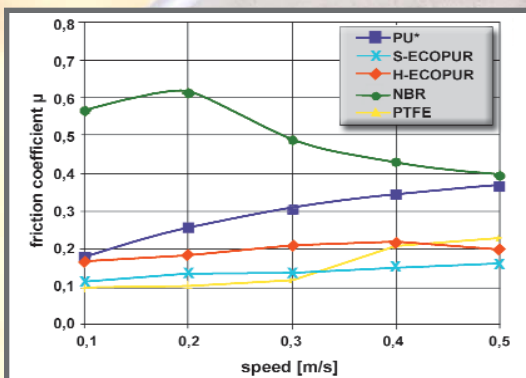


S-ECOPUR seals

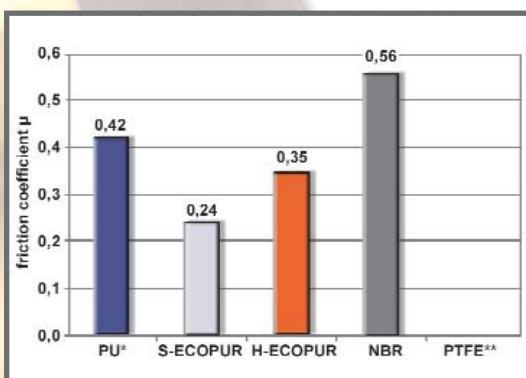
S-ECOPUR® is a modified version of ECONOMOS' well-known and successful material H-ECOPUR®. S-ECOPUR® is modified by the incorporation of a synergistic combination of solid lubricants, which leads to enhanced sliding properties compared to common sealing materials.

This superior sliding properties are clearly demonstrated by tests at the University of Stuttgart, Germany.

The graphs are showing that S-ECOPUR® has a lower friction coefficient than virgin PTFE above a sliding speed of 0,3 m/s (all data measured in state of mixed friction against steel with ring-disc test) and of course than other sealing materials of the group of polyurethanes and elastomers.



**FRICTION COEFFICIENT μ of various materials
as a function of rotational speed**



**FRICTION COEFFICIENT μ of various materials
after a stillstand period of 14 hours**

Since S-ECOPUR® contains no lubricants based on molybdenum disulfide, seals made of this material can also be used successfully in poor lubricating fluids such as water and waterbased pressure fluids. The outstanding friction properties of S-ECOPUR® make this material well suited for sealing applications with long standstill periods, which cause sticking of the seal on the rod or bore and lead to high breakout forces. Additionally, destruction/rupture of the sealing lip during the starting movement of the equipment can also occur.

The tests show that S-ECOPUR® exhibits half the friction coefficient of a standard sealing polyurethane grade and nearly only a third of a 85 Shore A NBR rubber after a standstill period of 14 hours at a load of 5 MPa (testing of virgin PTFE was not possible, because of deformation induced by creeping).

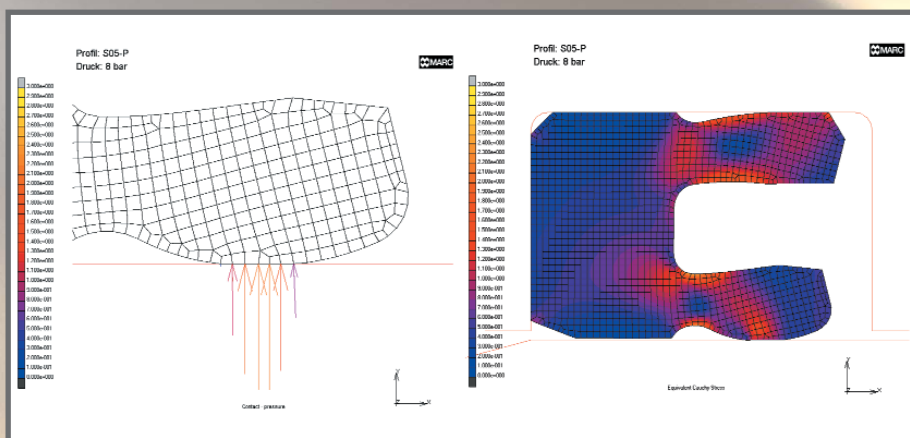
S-ECOPUR® is the ideal sealing material for the following application areas:

- dry running conditions
- high sliding speeds
- high pressure dynamic applications
- minimization of stick-slip behaviour
- reduction of breakout forces
- static sealing under load
- poor lubrication fluids and gases
- water-based fluids
- cutting fluids
- pneumatic applications

This highly abrasive resistant material is available in two versions:

- standard 95 Shore A version
- special 57 Shore D version for applications requiring a harder material and therefore with a lower friction coefficient - particularly for composite type seals.

S-ECOPUR® S05-P - the Economos solution for dry running pneumatic applications



S-ECOPUR® S05-P combines the benefits of a friction-reduced material with a friction reduced design.

Successful applications

- **Rod seals**
with superiour running time in demolition hammers at high frequency loadings up to 17 hertz
- **Composite seals**
with minimized stick-slip behaviour for telescopic cylinders of lifting platforms
- **sealing elements** for steering devices of ships and submarines for reducing stick-slip and preventing ingress of sea-water
- **Rod seals, Piston seals and Wipers** for underlubricated pneumatic cylinders showing minimised stick-slip and low wear

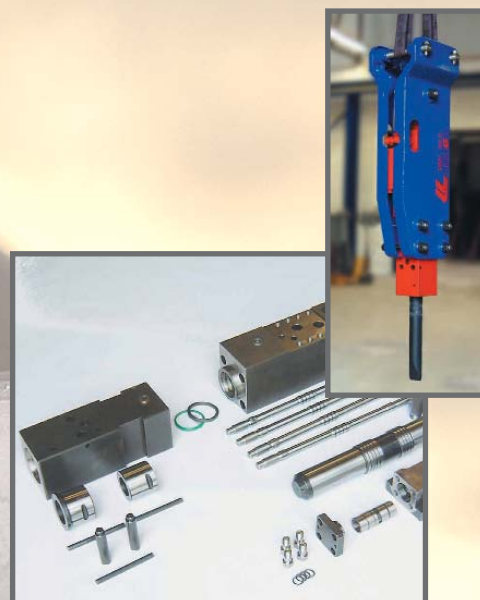
MATERIAL DATA SHEET

S - ECOPUR (grey/black)
Self-lubricated thermoplastic polyurethane-elastomer (TPU) with lubricating agents for reduced friction applications

DIN **ASTM**
YAU **YAU**

Property	Unit	Value	Standard
Durometer hardness	SHORE A	95 ± 1	DIN 53505
Durometer hardness	SHORE D	48 ± 3	DIN 53505
Density	g/cm ³	1,24 ± 0,02	DIN 53479
Tensile strength	N/mm ²	50	DIN 53504
Elongation at break	%	380	DIN 53504
100 % modulus	N/mm ²	17	DIN 53504
Compression set: 70°C / 24h, 20 % compression	%	25	----
Compression set: 100°C / 24h, 20 % compression	%	30	----
Compression set: 70°C / 70h, 10 % compression	%	----	DIN 53517
Tear strength	N/mm	120	DIN 53515
Rebound resilience	%	----	DIN 53512
Abrasion	mm ³	17	DIN 53516
Minimum service temperature	°C	-20	----
Maximum service temperature	°C	+110	----

The mentioned data are only valid for test pieces of the corresponding ISO, DIN and ASTM standards and cannot be directly related to gaskets and joints. The values which are marked with the symbols greater than (>) and smaller than (<) are nominal values and must be fulfilled of each batch. These values are only tested on selected samples.



ECONOMOS®

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