PTFE 102

Color – own dark grey color

PTFE 102 (PTFE filled with glass fiber and molybdenum disulphide).

PTFE 102 is a semi-finished made of filled semi-crystalline thermoplastic based on polytetrafluoroethylene.

Due to its special composition, PTFE 102 has a very good physical characteristics and better fitting properties other than PTFE 101.

The chemical properties are high same as with PTFE 101, but some ingredients may cause destruction of fillers.

PTFE 102 has an exclusively wide temperature range (from -200°C up to +260°C), very low friction coefficient and high chemical resistance. PTFE 102 has a «non-stick» surface and doesn't absorb moisture. By its fillers the time-depended deformations lower than with PTFE 101 (reduction in cold flow, increased resistance to extrusion).

Critical pv values (p – power, v – speed)

- v=0,05 m/s p=0,032 N m/mm^2
- v=0,5 m/s p=0,039 N m/mm^2
- v=5 m/s p=0,039 N m/mm^2

Temperatures rising beyond 150°C, steel counter surface turns blue.

Resistance

Main material and glass fibers are resistant to most chemicals, only molybdenum disulphide can be exposed to the impact of chemicals that is why test for resistance are required. PTFE 102 is not suitable for use in area with high radiation. Dynamic use in water is not recommended (high depreciation).

Application

PTFE 102 can be used for production of U-Rings, seals, anti-extrusion back-up rings, support rings, chevron seals and guide rings. PTFE 102 mainly used in applications with high thermal and chemical stress.

This material can also be used in cases where low friction, high extrusion and deformation resistance are required, and PTFE 101 can not be used.

Mainly used

- Seals for low friction at high stress
- Sliding and back-up elements
- Seal parts with elastic support (elastomers, springs)

PTFE 102 Material Data Sheet

Properties	Value	Unit	Standard
Hardness	≥55	Sh D	ASTM D2240
Density	2,20 - 2,30	g/cm³	ASTM D792
Tensile strength	≥18	N/mm²	ISO 12086 ISO 527
Elongation at break	≥230	%	ISO 12086 ISO 527
Compressive strength at 1% deformation	≥8	N/mm²	ASTM D695
Deformation under load at room temperature 24 hours at 13,7 N/mm2	≤8	%	ASTM D621
Permanent deformation as above after 24 hours of rest at room temperature	≤4	%	ASTM D621
Coefficient of Linear Expansion (25° - 100°C)	9 - 12	10-5 (mm/mm)/ °C	ASTM D696
Min. service temperature	-200	°C	
Max. service temperature	+260	°C	