

POM

Color - black

POM is a semi-finished material, made of polyacetal, one of the most important an engineering thermoplastic with good physical characteristics, low water absorption and good chemical resistance.

POM can be used in mineral oils, fire-resistant water based hydraulic fluids (HFA, HFB, HFC fluids). It is not resistant to acids and basis.

POM has a high ability to maintain the size, resilience and low moisture absorption. Very good characteristics in friction and sliding.

Friction coefficient (during sliding) = 0,25-0,32 (without lubrication against still 16 Mp $p=0,05 \text{ N/mm}^2$, $v=0,6 \text{ m/s/5h}$).

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

- $v=0,05 \text{ m/s}$ $p=0,032 \text{ N m/mm}^2 \cdot \text{s}$
- $v=0,5 \text{ m/s}$ $p=0,039 \text{ N m/mm}^2 \cdot \text{s}$
- $v=5 \text{ m/s}$ $p=0,039 \text{ N m/mm}^2 \cdot \text{s}$

Temperature range is from -50°C up to $+100^\circ\text{C}$ (for short period up to $+130^\circ\text{C}$).

Pom has a good electrical properties, high chemical resistance and tensile strength. Material has a very low moisture absorption.

Application

POM can be used for production of anti-extrusion rings, guide rings, wipers and for rings that are produced on the machines with tight tolerances. POM is mainly use in cases where high hardness and low friction coefficient are required, for guide and back-up rings, applied at temperature not higher than $+100^\circ\text{C}$. When using POM for a long period of time at high load (back-up rings, tensioning element) the temperature should be not higher than $+80^\circ\text{C}$.

Resistance

Good resistance	Average resistance	Low resistance
Mineral oils and lubricants	Ketones	Concentrated acids and basis
Vegetable oils and adiposes	-	Oxidants
Fuel	-	-
Alcohols	-	-

Water	-	-
Dilute acid and alkali	-	-
Aliphatic and aromatic hydrocarbones	-	-

Mainly used

- Guide rings
- Back-up rings
- Special seal parts
- Special wipers
- Valves/valve seat
- Constructional parts
- Bearing shells and sleeves.

POM Material Data Sheet

Properties	Value	Unit	Standard
Hardness	85	Sh D	ISO 868
Specific gravity	1,4	g/cm ³	ISO 1183
Ball indentation hardness	145	MPa	ISO 2039-1 H358/30
Tensile stress at yield	65	MPa	ISO 527-2
Elongation at yield	9,4	%	ISO 527-2
Elongation at break	27	%	ISO 527-2
Coefficient of linear thermal expansion	11	10 ⁻⁵ /K	DIN 53752
Min. service temperature (glass transition temperature)	-40	°C	
Max. service temperature (High Heat Resistance)	+110	°C	