

Physical properties POM-C LSG

Properties	Test methods	Units	Values
Colour	-	-	natural, black, blue, green, yellow, brown, red
Density	ISO 1183	g/cm ³	1.41
Water absorption:			
- after 24/96 h immersion in water of 23°C	ISO 62	mg	17 / 33
	ISO 62	%	0.18 / 0.36
- at saturation in air of 23°C / 50% RH	-	%	0.20
- at saturation in water of 23°C	-	%	0.80
Thermal Properties			
Melting temperature (DSC, 10° C/min.)	ISO 11357	°C	168
Glass transition temperature	ISO 113572	°C	-
Thermal conductivity at 23°C	-	W/(K.m)	0.31
Coefficient of linear thermal expansion:			
- average value between 23 and 60°C	-	m/(m.K)	110 x 10 ⁻⁶
- average value between 23 and 100°C	-	m/(m.K)	125 x 10 ⁻⁶
Temperature of deflection under load:			
- method A: 1.8 MPa	ISO 75-1/-2	°C	100
Max. allowable service temperature in air:			
- for short periods	-	°C	140
- continuously: for. min. 20'000 h	-	°C	100
Min. service temperature	-	°C	-50
Flammability:			
- „Oxygen Index“	ISO 4589	%	15
- according to UL 94 (1.5 / 3 mm thickness)	-	-	HB / HB
Mechanical Properties at 23°C			
Tension test:			
- tensile stress at yield	ISO 527	MPa	70
- tensile strength	ISO 527	MPa	70
- tensile strain at yield	ISO 527	%	20
- tensile strain at break	ISO 527	%	40
- tensile modulus of elasticity	ISO 527	MPa	3000
Compression test:			
- compressive stress at 1 / 2 / 5% nominal strain	ISO 604	MPa	22 / 40 / 72
Charpy impact strength - unnotched	ISO 179-1/1eU	kJ/m ²	150
Charpy impact strength - notched	ISO 179-1/1eA	kJ/m ²	9
Ball indentation hardness	ISO 2039-1	N/mm ²	115
Rockwell hardness	ISO 2039-2	-	M80
Electrical Properties at 23°C			
Electrical strength	IEC 60243	kV/mm	20
Volume resistivity	IEC 60093	Ohm.cm	> 10 ¹⁴
Surface resistivity	IEC 60093	Ohm	> 10 ¹³
Relative permittivity ϵ_r :			
- bei 100 Hz	IEC 60250	-	3.8
- bei 1 MHz	IEC 60250	-	3.8
Dielectric dissipation factor $\delta \tan$:			
- bei 100 Hz	IEC 60250	-	0.003
- bei 1 MHz	IEC 60250	-	0.008
Comparative tracking index (CTI)	IEC 60112	-	600

Note: 1 g/cm³ = 1000 kg/m³; 1 Mpa = 1 N/mm²; 1 kV/mm = 1 MV/m.

Certifications on biocompatibility type testing
USP Class VI (on the natural colored POM copolymer in the preparation of POM-C LSG; ISO 10993-5 (cytotoxicity test on the stock shapes);

This table is a valuable help in the choice of a material. The data listed here fall within the normal range of products properties, but they should not be used to establish material specification limits nor used alone as the basis of design.

POM-C / POM-H

These are virgin copolymer ant homopolymer acetal grades. The acetal copolymer ist more resistant against hydrolysis, strong alkalis and thermaloxidative degradation than the acetal homopolymer. The latter, however, has higher mechanical strength, stiffness, hardness and creep resistance as well as a lower thermal expansion rate and often it also presents a better wear resistance.

Main characteristics:

- high mechanical strength, stiffness and hardness
- excellent resilience
- good creep resistance
- high impact strength, even at low temperatures
- very good dimensional stability
- good sliding properties and wear resistance
- excellent machinability
- good electrical insulating and dielectric properties
- physiologically inert (suitable for food contact)
- not self-extinguishing

POM is very well suited for machining an automatic lathes and is particularly recommended for mechanical precision parts.