U06 - POM black

Chemical Designation
POM-C (Polyacetal (Copolymer)

Colour
black opaque

Density
1.41 g/cm³

Main features
- high stiffness
- high strength
- high toughness
- good chemical resistance
- difficult to bond
- good slide and wear properties
- good machinability

Target Industries
- mechanical engineering
- automotive industry
- aircraft and aerospace technology
- food technology
- oil and gas industry

MECHANICAL PROPERTIES	PARAMETER	VALUE	UNIT	NORM	
Tensile strength	50mm/min	67	MPa	DIN EN ISO 527-2	
Modulus of elasticity (tensile test)	1mm/min	2800	MPa	DIN EN ISO 527-2	1)
Tensile strength at yield	50mm/min	67	MPa	DIN EN ISO 527-2	
Elongation at yield (tensile test)	50mm/min	9	%	DIN EN ISO 527-2	
Elongation at break (tensile test)	50mm/min	32	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	91	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2600	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	20/35/68	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	150	kJ/m2	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	6	kJ/m2	DIN EN ISO 179-1eA	
Shore hardness		82		DIN EN ISO 868	

Comment
(1) For tensile test: specimen type 1b
(2) For flexural test: support span 64mm, norm specimen.
(3) Specimen 10x10x10mm
(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
(5) For Charpy test: support span 64mm, norm specimen.

THERMAL PROPERTIES	PARAMETER	VALUE	UNIT	NORM	
Glass transition temperature		-60	°C	DIN EN ISO 11357	1)
Melting temperature		166	°C	DIN EN ISO 11357	
Service temperature	short term	140	°C	-	2)
Service temperature	long term	100	°C	-	
Thermal expansion (CLTE)	23-60°C, long.	13	$10^{-5}\,K^{-1}$	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	14	$10^{-5}\,K^{-1}$	DIN EN ISO 11359-1;2	
Specific heat		1.4	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.39	J/(g*K)	ISO 22007-4:2008	

Comment
(1) Found in public sources.
(2) Found in public sources. Individual testing regarding application conditions is mandatory.

ELECTRICAL PROPERTIES	PARAMETER	VALUE	UNIT	NORM	
Surface resistivity	Silver electrode, 23°C, 12% r.h.	10^{14}	Ω	-	1)
Volume resistivity	Silver electrode, 23°C, 12% r.h.	10^{14}	Ω*cm	-	2)
Dielectric strength	23°C, 50% r.h.	38	kV/mm	ISO 60243-1	3)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112	

Comment
(1) Specimen in 20mm thickness
(2) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.
(3) Specimen in 1mm thickness

OTHER PROPERTIES	PARAMETER	VALUE	UNIT	NORM	
Water absorption	24h / 96h (23°C)	0.05 / 0.1	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		-	2)
Resistance to weathering		(+)		-	
Flammability (UL94)	listed (value at 1.5mm)	HB		DIN IEC 60695-11-10	3)

Comment
(1) Ø ca. 50mm, h=13mm
(2) (+) limited resistance
(3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

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