



Material data sheet

PET black

Chemical Designation: Polyethylene terephthalate
DIN-abbreviation: PET
Colour / Fillers: black opaque
Density: 1,39 g/cm³

Main features

- high toughness
- good chemical resistance
- very high strength
- easy to polish
- good weldable and bondable
- good slide and wear properties
- good machinability

Target Industries

- mechanical engineering
- automotive industry
- electronics
- food technology

Characteristics

mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1 mm / min	3400	MPa	DIN EN ISO 527-2 1)	1) For tensile test: specimen type 1b 2) For flexural test: support span 64 mm, norm specimen. 3) Specimen 10 x 10 x 10 mm 4) Specimen 10 x 10 x 50 mm, modulus range between 0,5 and 1% compression. 5) For Charpy test: support span 64 mm, norm specimen. 6) Specimen in 4 mm thickness
Tensile strength	50 mm / min	91	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50 mm / min	91	MPa	DIN EN ISO 527-2	
Elongation at yield	50 mm / min	4	%	DIN EN ISO 527-2	
Elongation at break	50 mm / min	15	%	DIN EN ISO 527-2	
Flexural strength	2 mm / min, 10 N	134	MPa	DIN EN ISO 178 2)	
Modulus of elasticity (flexural test)	2 mm / min, 10 N	3400	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5 mm / min, 10 N	19/36/86	MPa	EN ISO 604 3)	
Compression modulus	5 mm / min, 10 N	2800	MPa	EN ISO 604 4)	
Impact strength (Charpy)	max. 7,5 J	27	kJ/m ²	DIN EN ISO 179-1eU 5)	
Ball indentation hardness		195	MPa	ISO 2039-1 6)	



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thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		81	°C	DIN EN ISO 11357 1)	1) Found in public sources. 2) Found in public sources. Individual testing regarding application conditions is mandatory.
Melting temperature		244	°C	DIN EN ISO 11357	
Service temperature	short term	170	°C		
Service temperature	long term	110	°C		
Thermal expansion (CLTE)	23-60 °C, long	8	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100 °C, long	10	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	

electrical properties	parameter	value	unit	norm	comment
surface resistivity		10 ¹⁴	Ω	DIN IEC 60093	1) Due to the black colourant and moisture uptake off the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.
volume resistivity		10 ¹⁴	Ω*cm	DIN IEC 60093 1)	

other properties	parameter	value	unit	norm	comment
Water absorption	24 h / 96 h (23 °C)	0.2 / 0.3	%	DIN EN ISO 62 1)	1) Ø ca. 50 mm, h = 13 mm 2) - poor resistance 3) (+) limited resistance 4) 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.
Resistance to hot water/bases		-		- 2)	
Resistance to weathering		(+)			
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10 4)	

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