TECADUR PET natural - Stock Shapes (rods, plates, tubes)

Chemical Designation
PET (Polyethylene terephthalate)

Colour
white opaque

Density
1.39 g/cm^3

Main features
- high strength
- good slide and wear properties
- good wear resistance
- good weldable and bondable
- not hot water resistant over 60°C
- high toughness
- good chemical resistance
- high stiffness

Target Industries
- mechanical engineering
- automotive industry
- electronics
- food technology

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	91	MPa	DIN EN ISO 527-2		(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. (6) Specimen in 4mm thickness
Modulus of elasticity (tensile test)	1mm/min	3300	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	91	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	4	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	14	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	134	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	3400	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	21/38/89	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	2800	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	150	kJ/m^2	DIN EN ISO 179-1eU	5)	
Ball indentation hardness		194	MPa	ISO 2039-1	6)	

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		2)	
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	-	
volume resistivity		10^{14}	Ω*cm	-	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) - poor 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.
Resistance to hot water/ bases		-		-	2)	
Resistance to weathering		-				
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)	

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Ensinger India Engineering Plastics Pvt Ltd.
2205, 22nd Floor, SOLUS Building,
Hiranandani Estate, Thane West - 400607,
India

Phone +91 22-49797082
www.ensinger.in

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