

TECANYL 731 grey - Stock Shapes (rods, plates, tubes)

Chemical Designation

PPE (Polyphenylene ether)

Colour

grey opaque

Density

1.1 g/cm³

Main features

- high strength
- electrically insulating
- high toughness
- good weldable and bondable
- sensitive to stress cracking

Target Industries

- mechanical engineering
- electronics
- energy industry
- food technology
- automotive industry

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	57	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	2400	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	57	MPa	DIN EN ISO 527-2	
Elongation at yield (tensile test)	50mm/min	15	%	DIN EN ISO 527-2	
Elongation at break (tensile test)	50mm/min	22	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	85	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2mm/min, 10 N	2500	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	18/33/74	MPa	EN ISO 604	
Compression modulus	5mm/min, 10 N	2100	MPa	EN ISO 604	
Impact strength (Charpy)	max. 7,5J	69	kJ/m ²	DIN EN ISO 179-1eU	
Ball indentation hardness		146	MPa	ISO 2039-1	
Thermal properties	parameter	value	unit	norm	
Glass transition temperature		145	°C	DIN EN ISO 11357	(1) Found in public sources.
Melting temperature		n.a.	°C	DIN EN ISO 11357	(2) n.a. = not applicable
Service temperature	short term	110	°C		(3) Found in public sources.
Service temperature	long term	85	°C		Individual testing regarding application conditions is mandatory.
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.	8	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1.3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.21	W/(K*m)	ISO 22007-4:2008	
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 / 0.04	%	DIN EN ISO 62	(1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		(+)		-	(2) (+) limited resistance
Resistance to weathering		-		-	(3) - poor resistance
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	(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.

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