

TECACOMP PET TRM black 1015083 - Compounds

Chemical Designation

PET (Polyethylene terephthalate)

Main features

→ very good bearing and wear properties

Target Industries

→ automotive industry
→ mechanical engineering

Colour

black

Density

1.5 g/cm³

Fillers

carbon fibres, PTFE

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	175	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)	50 mm/min	14500	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	2,0	%	DIN EN ISO 527-1	
Impact strength (Charpy)		25	kJ/m ²	DIN EN ISO 179-1eU	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		70	°C	DIN 53765	
Melting temperature		255	°C	DIN 53765	
Heat distortion temperature	HDT A	235	°C	ISO-R 75 Method A	
Heat distortion temperature	HDT B	255	°C	ISO-R 75 Method B	
Service temperature	long term	110	°C	-	
Service temperature	short term	170	°C	-	
Thermal expansion (CLTE)	longitudinal (at 23 - 60 °C)	12	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 23 - 60 °C)	75	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 80 - 110 °C)	8	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 80 - 110 °C)	124	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal conductivity	in-plane	1,4	W/(K*m)	ISO 22007-4:2008	
Thermal conductivity	through-plane	0,4	W/(K*m)	ISO 22007-4:2008	
Electrical properties	parameter	value	unit	norm	comment
volume resistivity		1,3 x 10 ³	Ω*m	DIN EN ISO 3915	
Other properties	parameter	value	unit	norm	comment
Water absorption	23 °C / 50 % relative humidity up to saturation	0,1	%	DIN EN ISO 62	(1) No listing at UL (Yellow Card).
Molding shrinkage	longitudinal	0,24	%	DIN EN ISO 294-4	
Molding shrinkage	transverse	0,79	%	DIN EN ISO 294-4	
Flammability (UL94)		HB		DIN IEC 60695-11-10; 1)	
Melt flow index (MFI)	280 °C / 5 kg	85	g/10 min	DIN EN ISO 1133	
Bulk density		0,67	g/cm ³	EN ISO 60	
Processing parameter	parameter	value	unit	norm	comment
Cylinder/processing temperature		260 - 280	°C	-	
Mould temperature		130 - 160	°C	-	
Material temperature		270 - 280	°C	-	

→ This material can be processed as a thermoplastic taking the normal technical provisions into account. The above mentioned information refers exclusively to the injection moulding process.

→ Processing should be carried out as gently as possible, in order to maintain the maximum fibre length in the component. Back pressure and injection rate should be adjusted to the component geometry accordingly. The optimum processing temperature depends upon the respective geometry of the moulded part and can be different from machine to machine.

Predrying	parameter	value	unit	norm	comment
Permissible residual moisture content		< 0,02	%	-	
Drying temperature		< 120	°C	-	
Drying time		3 - 6	h	-	

→ To achieve optimum mechanical properties, it is recommended to pre-dry the material with the above mentioned parameters.

→ Information on storage and shelf life: The granules must be stored in dry, normally tempered rooms and in closed containers. For moisture-sensitive materials, the granules must be sealed airtight. Protection against direct sunlight must be guaranteed. The granules are usually subject to the requirements of no shelf life limitation. Shelf Life may be limited by some additives.

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