

Material Description

Glass Filled PTFE / Carbon Filled PTFE

Colour

Black

Notes

The addition of fillers to the PTFE improves or modifies its properties depending upon the nature and quantity of filler:

Properties	Method	Unit	Unfilled PTFE	typical values FILLED PTFE	
Type of filler - % approx.	-	-	-	25% Glass Filled PTFE	25 Carbon Filled PTFE
Specific gravity	ASTM D792	-	2,17	2,23	2,10
Tensile strength	ASTM D1457	N/mm <sup>2</sup>	30	16	15
Elongation at break	ASTM D1457	%	300	260	180
Compressive strength 1% deformation	ASTM D695	N/mm <sup>2</sup>	4,5	7,0	10,0
Deformation under load 14N/mm <sup>2</sup> for 24h - Total P	ASTM D621(2)	%	14,5	9,5	6,5
Deformation under load 14N/mm <sup>2</sup> for 24h - Total T	ASTM D621(2)	%	16,5	13,5	5,5
Deformation under load 14N/mm <sup>2</sup> for 24h - Permanent P	ASTM D621(2)	%	8,0	5,0	3,0
Deformation under load 14N/mm <sup>2</sup> for 24h - Permanent T	ASTM D621(2)	%	8,5	7,8	2,8
Hardness (shore D - 15 sec)	ASTM D2240	-	55	63	63
Friction coefficient dynamic	ASTM D3028 (1)	-	0,05	0,07	0,06
Wear factor (K)	-	mm <sup>3</sup> sec/Nmh	1	0,00071	0,00082
PV limit at 0,05 m/sec	-	Nm/mm <sup>2</sup> sec	0,040	0,365	0,365
PV limit at 0,50 m/sec	-	Nm/mm <sup>2</sup> sec	0,070	0,475	0,460
PV limit at 5,00 m/sec	-	Nm/mm <sup>2</sup> sec	0,095	0,590	0,545
Coefficient of linear thermal expansion from 25 to 100 °C	ASTM E831	°C <sup>-1</sup>	16x10 <sup>-5</sup>	10x10 <sup>-5</sup>	9,5x10 <sup>-5</sup>
Thermal conductivity	ASTM D2214	W/mK	0,23	0,43	0,64
Dielectric strength (short-time air thickness 0,5 mm)	ASTM D149	kV/mm	55	13	-
Dielectric constant (50-10 <sup>9</sup> Hz)	ASTM D150	-	2,1	2,5	-
Dissipation factor	ASTM D150	-	<0,0002	0,003	-
Volume resistivity	ASTM D257	Ohm/cm	10 <sup>17</sup>	10 <sup>16</sup>	10 <sup>3</sup>
Surface resistivity(3)	ASTM D257	Ohm	10 <sup>17</sup>	10 <sup>16</sup>	10 <sup>3</sup>

**Note:**

P - Designates properties parallel to moulding direction

T - Means perpendicular to moulding direction

(1) Speed 0,08 m/sec; load 0,1 N/mm<sup>2</sup>, sliding surface steel roughness Ra = 0,5 micron

(2) Superseded standard

(3) 100% relative humidity

All the determinations have been made at 23 °C

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