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PTFE (Polytetrafluoroethylene)

MECHANICAL PROPERTIES	Test method	Natural	Units
Density	DIN 53479	2.14 - 2.18	g/cm^3
Yield Stress (Tensile Strength)	DIN 53455	20 - 40	N/mm^2
Elongation at Break	DIN 53455	210 - 400	%
Shear Modulus	DIN 53445	750	N/mm^2
Compressive Strength 1% Yield Stress	DIN 53454E	10	N/mm^2
10% Yield Stress	DIN 53454E	18	N/mm^2
Flexural Strength	DIN 53452	not broken	N/mm^2
Limiting Flexural Stress	DIN 53452	18 - 20	N/mm^2
Torsional Rigidity	DIN 53447	160	N/mm^2
Impact Strength	DIN 53453	not broken	kJ/m^2
Notched Impact Strength at -57˚C	ASTM-D256	2.0	ft - lb
at 23˚C	ASTM-D256	3.0	per inch
at 77˚C	ASTM-D256	6.0	of notch
Tensile Impact Strength at 20˚C	DIN 53448	650	kJ/m^2
at 23˚C	DIN 53448	680	kJ/m^2
Shore Hardness	DIN 53505	50 - 60	Scale D
Coefficient of Friction on Polished and Hardened Steel			
Dry		0.04 - 0.25	
Lubricated by Water		0.04 - 0.08	
Lubricated by Oil		0.04 - 0.05	
THERMAL PROPERTIES			
Crystalline Melting Range		320 - 340	˚C
Coefficient of Linear Expansion Between 20˚C and 100˚C	DIN 52328	16 10^{-5}	K^{-1}
Between 20˚C and 200˚C	DIN 52328	19.5 10^{-5}	K^{-1}
Between 20˚C and 300˚C	DIN 52328	25 10^{-5}	K^{-1}
Specific Heat at 0˚C		0.96	kJ/kgK
at 50˚C		1.03	kJ/kgK
Thermal Conductivity	DIN 52612	0.25 - 0.50	W/mK
Vicat Softening Point	DIN 53460 (in air)	110	˚C
Heat Distortion Temperature Method A	ISO/R75	50 - 60	˚C
Method B	ISO/R75	130 - 140	˚C
ELECTRICAL PROPERTIES			
Dielectric Constant at 50 Hz	DIN 53483	2.1	
at 107 Hz	DIN 53483	2.1	
Dielectric Loss Factor at 50 Hz	DIN 53483	0.5 10^{-4}	
at 107 Hz	DIN 53483	0.7 10^{-4}	
Dielectric Strength	VDE 0303/part2 (0.2mm film)	50 - 80	kV/mm
Volume Resistivity	DIN 53482	10^{18}	ohm cm
Surface Resistance	DIN 53482	10^{17}	ohm
Tracking Resistance	VDE 0303 part 1/9.64	KA3c	class
Arc Resistance	VDE 0303 (part 5)	L4	class
GENERAL PROPERTIES			
Water Absorption		0	%
Inflammability		will not burn	