

PROPERTY	UNIT	ASTM or UL TEST	VIRGIN PTFE	CHEMICALLY MODIFIED PTFE	15% GLASS FILLED PTFE	25% GLASS FILLED PTFE	15% GLASS FIBRE +5% MOS2 FILLED PTFE	25% CARBON# FILLED PTFE	35% CARBON# FILLED PTFE
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PHYSICAL									
DENSITY	gm/cc	ASTM D-792	2.1-2.2	2.15 - 2.2	2.23-2.24	2.24-2.25	2.23-2.24	2.12-2.14	2.11-2.13
WATER ABSORPTION	%	ASTM D-570	0	0	0.015	0.013	0.015	0	0

MECHANICAL									
TENSILE STRENGTH	kgf/cm2	ASTM D-638	210-350	325	150-225	125-200	150-220	120-155	110-140
ELONGATION AT BREAK	%	ASTM D-638	250-400	400-450	225-325	200-300	220-320	100-150	90-125
COMPRESSIVE STRENGTH	kgf/cm2	ASTM D-695	40-50	45-55	65-75	75-85	65-75	75-85	80-90
COMPRESSIVE MODULUS	kgf/cm2	ASTM D-695	4000	4500	6000	7000	6000	8400	8700

DEFORMATION UNDER LOAD									
A. 2 Hrs. 23°C 113 kg/cm2	% ASTM D-621	12	3.5	10	9	10	5	4	
B. 24 Hrs. 23°C 113 kg/cm2			15	5	12	11	12	7	6
C. PERMANENT			8	2.5	7.5	7	7.5	3.5	3
D. 2 Hrs. 150°C 113 kg/cm2			55	40	52	50	50	35	30
FLEXURAL STRENGTH	kgf/cm2	ASTM D-790	57	60	50	42	50	96	90
FLEXURAL MODULUS	kgf/cm2	ASTM D-790	3500-6300	7000	20000	16700	20000	11900	10500

IMPACT STRENGTH									
A. -200°C	cmkgf/cm2	ASTM D-256	9	9	9.25	9.5	9	8	9.5
B. +200°C			15	15	12-May	11	12	10	12
HARDNESS	Shore D	ASTM D-2240	60-65	60-65	65-70	70-75	62-68	70-75	72-80

COEFFICIENT OF FRICTION									
A. DYNAMIC P-7 kg/cm2 V-0.5 m/s			0.04-0.06	0.02-0.03	0.31-0.37	0.5-0.54	0.15-0.20	0.12-0.17	0.13-0.18
B. STATIC P-35 kg/cm2			0.05-0.08	0.04-0.06	0.01-0.12	0.11-0.13	0.08-0.01	0.09-0.11	0.01-0.12

THERMAL																
HEAT RESISTANCE AT ATM. PRESSURE	°C	—	-250 to +260	-250 to +260	-250 to +260	-250 to +260	-250 to +260	-250 to +260	-250 to +260	-250 to +260						
THERMAL CONDUCTIVITY	10-4 cal cm S° C	cenco Fitch	6	6	8	9	9	13	14							
LINER THERMAL EXPANSION	% ASTM D-696	Axial	Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	Axi- Radial	
A. 30-150°C			1.5	1.5	1.5	1.5	1.5	1.0	1.5	0.7	1.5	1.0	1.2	1.0	1.1	0.9
B. 30-200°C			2.4	2.3	2.4	2.3	2.3	1.8	2.2	1.0	2.3	1.8	1.9	1.5	1.8	1.4
C. 30-250°C			3.4	3.6	3.4	3.6	3.3	2.2	3.2	1.4	3.3	2.2	2.7	2.4	2.5	2.3

ELECTRICAL									
DIELECTRIC STRENGTH	Kv/mm	ASTM-149	24	30-35	16	12	16	2	2
VOLUME RESISTIVITY	ohm cm	ASTM D-257	1018	1020	1015	1015	1015	104	104
SURFACE RESISTIVITY	ohm	ASTM D-258	1015	1018	1015	1015	1015	107	107

Chemical Resistance : PTFE is chemically inert & unaffected by all known chemicals except molten or dissolved alkali metals - Sodium; Potassium; Rubidium; Cesium; Francium & Fluorine gas, certain fluorine compounds & complexes at elevated temperatures. Filled PTFE has inferior chemical resistance depending upon the particular filler.

Properties are of Soft - Amorphous carbon filled PTFE. Properties of Hard carbon fibre filled PTFE : Improved compressive properties, Improved wear properties & hardness, Improved flexural strength, Slightly inferior tensile properties, Compared to Soft - Amorphous carbon filled PTFE.

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