

Redco™ PTFE & TFE

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Redco™ PTFE (TEFLON®*) & TFE offer outstanding properties making it the ultimate choice for a magnitude of applications. Redco™ PTFE has the lowest coefficient of friction, no water absorption, is self lubricating, excellent chemical resistance and has a high temperature tolerance (+500F)

Redco™ PTFE is very non-reactive, and so is often used in containers and pipework for reactive chemicals. Its extremely high bulk resistivity also makes it an ideal material for fabricating long life electrets, useful devices that are the electrostatic analogues of magnets.

As well, because of its extremely low coefficient of friction, it is used for applications where sliding action of parts is needed: bearings, bushings, gears, slide plates, etc. In these applications it performs significantly better than nylon and acetal; it is comparable with ultra high molecular weight polyethylene (UHMWPE), although UHMWPE is more resistant to wear than Teflon®. For these applications, versions of teflon with mineral oil or molybdenum disulfide embedded as additional lubricants in its matrix are being manufactured.

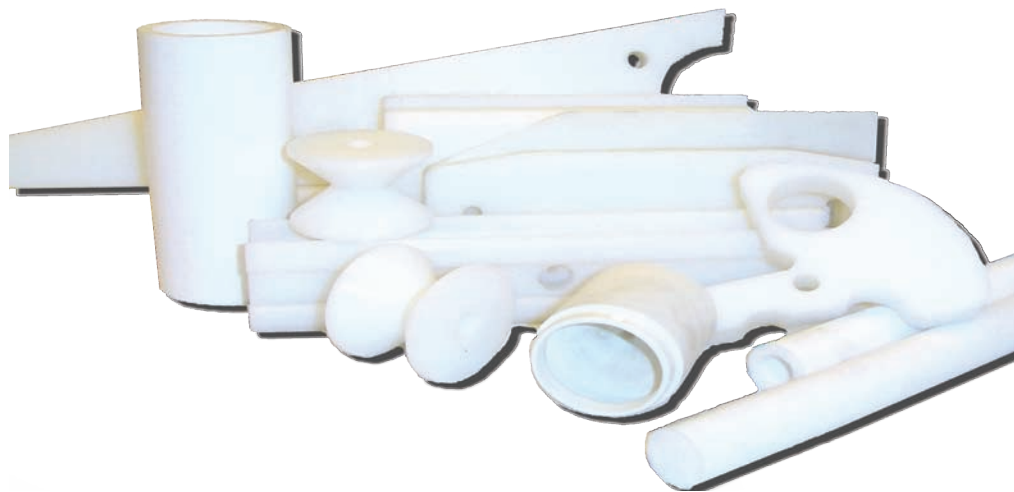
Other varieties available: PVDF (Poly-Vinylidene Fluoride), Fluorosint, FEP (fluorinated Ethylene Propylene), PCTFE (Polychlorotrifluoroethylene), and ECTFE (Thylene-Chlorotrifluoroethylene).

STANDARD COLOR: White

TYPICAL APPLICATIONS:

Digester parts, food conveyors, bottling parts, lantern rings, gaskets, etc.

*TRADEMARK of DuPont



Redco™ PTFE

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							
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	kg/cm2	---	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							
THERMAL CONDUCTIVITY	10-4 cal cm S° C	cenco Filch	6	6	8	9	9	13	14							
LINER THERMAL EXPANSION	% ASTM D-696	Axial	Ra-dial	Axial	Radial	Axial	Radial	Axial	Radial	Axial	Radial	Axial	Radial	Axial	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 D-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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