PolyPro FR®

PolyPro FR® II is a flame retardant polypropylene that carries a UL 94 V-0 flame class rating with features that make it an economical choice for electrical insulation applications. The material is available in a range of standard thicknesses from 0.010" to 0.125". PolyPro FR® II can be fabricated into a wide range of designs using cost effective fabrication methods such as die cuting or knife cuting. It also exhibits excellent formability characteristics allowing it to be scored, shipped and quickly folded into many three dimensional shapes. PolyPro FR® II provides a lower cost alternative for designs incorporating the use of materials such as Formex®, Nomex® 410 and Valox®.
UL File Number: E228440

Key Characteristics	Test Method	Units- English (SI)	PolyPro FR 10	PolyPro FR 17	PolyPro FR 30	PolyPro FR 40	PolyPro FR 62	PolyPro FR 94	PolyPro FR 125
Manufacturing Specification									
Color			White/Black	White/Black	White/Black	White/Black	White/Black	White/Black	White/Black
Thickness		inches	0.010	0.017	0.030	0.040	0.062	0.084	0.125
Tolerance		inches	+0.003 /-0.001	+0.003 /-0.001	+0.003 /-0.002	+0.003 /-0.002	+0.003 /-0.001	+0.004 /-0.003	+0.004 /-0.004
Thickness		mm	0.3	0.4	0.8	1.0	1.6	2.4	3.2
Tolerance		mm	+0.08 /-0.025	+0.08 /-0.025	+0.08 /-0.05	+0.08 /-0.05	+0.1 /-0.07	+0.1 /-0.07	+/-0.10
Physical Properties									
Density	ASTM D-792	lbs/in^3(gm/cm^3)	0.037 (1.035)	0.037 (1.035)	0.037 (1.035)	0.037 (1.035)	0.037 (1.035)	0.037 (1.035)	0.037 (1.035)
Oxygen Index	ASTM D-2863	%	28	28	28	28	28	28	28
Water Absorption	ASTM D-570	%	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Heat Deflection Temperature Machine Direction (66 psi, 0.125")	ASTM D-648	°F (°C)	235 (113)	235 (113)	235 (113)	235 (113)	235 (113)	235 (113)	235 (113)
Heat Deflection Temperature Transerve Direction (66 psi, 0.125")	ASTM D-648	°F (°C)	227 (108)	227 (108)	227 (108)	227 (108)	227 (108)	227 (108)	227 (108)
Surface Energy	ASTM D2578	dynes/cm	42	42	42	42	42	42	42
Flammability	UL 94	--	VTM-0	V0	V0	V0	V0	V0	V0
RTI Electrical	UL746B	°F (°C)	230 (110)	230 (110)	230 (110)	230 (110)	230 (110)	230 (110)	230 (110)
RTI Mechanical	UL746B	°F (°C)	230 (110)	230 (110)	230 (110)	230 (110)	230 (110)	230 (110)	230 (110)
High Current Arc Ignition	UL746A	PLC	0	0	0	0	0	0	0
Mechanical Properties									
Tensile Yield, Machine Direction	ASTM D-882	PSI	5,194	4,648	4,495	3,751	4,118	3,742	3,540
Tensile Yield, Transerve Direction	ASTM D-882	PSI	3,193	3,217	3,214	3,246	3,208	3,201	3,186
Tensile Elongation, Yield	ASTM D-882	%	>100	>100	>100	>100	>100	>100	>100
Flexural Modulus Machine Direction	ASTM D-790	KSI	344	334	317	303	273	229	187
Flexural Modulus Direction	ASTM D-790	KSI	311	303	289	278	254	218	184
Flexural Strength Machine Direction	ASTM D-790	PSI	8,052	7,905	7,631	7,421	6,958	6,284	5,652
Flexural Strength Transerve Direction	ASTM D-790	PSI	8,467	8,285	7,946	7,685	7,111	6,277	5,468
IZOD Impact Strength Machine Direction	ASTM D-256	ft-lbs/in (J/m)	0.13	0.22	0.38	0.51	0.79	1.20	1.6
IZOD Impact Strength Transerve Direction	ASTM D-256	ft-lbs/in (J/m)	0.13	0.22	0.38	0.51	0.79	1.20	1.6
Electrical Properties									
Dielectric Strength (tester capacity 50,000 volts)	ASTM D-149	Volts/mil	2,021	1,481	1,240	971	782	>527	>398
Dielectric Breakdown (tester capacity 50,000 volts)	ASTM D-149	Volts	19,900	24,800	36,600	39,200	48,400	>50,000	>50,000
Volume Resistivity	ASTM D-257	ohm-cm	1.0 x 10^16	1.0 x 10^16	1.0 x 10^16	1.0 x 10^16	1.0 x 10^16	1.0 x 10^16	1.0 x 10^16
Dielectric Constant	ASTM D-150	--	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Dissipation Factor	ASTM D-150	--	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009
Comparative Tracking Index	ASTM D-3638	--	600+	600+	600+	600+	600+	600+	600+
Standard Formats and Sizes									
Standard Format		Sheet or Roll	Roll	Roll	Sheet or Roll	Sheet or Roll	Sheet	Sheet	Sheet
Standard Size		inches	48" x 24,000"	48" x 12,000"	48" x 72,000"	48" x 96 "	48" x 96 "	48" x 96 "	48" x 96 "
Square Feet Per Standard Format		Square Feet	4,000	2,166	2,400	32	32	32	32
Standard Format Weight		Lbs.	221	204	398	7.1	10.9	16.4	22.1