Black Isolation Layer (0.22mm)

Mechanical

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Tensile Strength @ Yield (0.43mm)	ASTM D882	psi	9427	ISO 527	MPa	61
Ultimate(0.43mm)	ASTM D882	psi	12118	ISO 527	MPa	66
Tensile Modulus (0.43mm)	ASTM D882	psi	377143	ISO 527	MPa	2617
Tensile Elongation at Break (0.43mm)	ASTM D882	%	41	ISO 527	%	41
Gardner Impact Strength at 0.03" (0.75 mm)	ASTM D3029	ft-lb	11	ISO 6603-1	J	28
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.43		kN/m	298
Propagation	ASTM D1922	g/mil	18.8		kN/m	16
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9		J	12
Fold Endurance (MIT)						
0.010" (0.25 mm)	ASTM D2176-69	double folds	27			
0.020" (0.50 mm)	ASTM D2176-69	double folds	12			

Thermal

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft²/°F/in	1.35		W/m°K	0.2
Coefficient of Thermal Expansion	ASTM E831	(x10⁻⁵/°F)	3.2	ISO 11359	(x10⁻⁵/°C)	5.8
Specific Heat @40°F (4°C)	ASTM E1269	Btu/lb/°F	0.3		KJ/Kg-°C	1.25
Glass Transition Temperature	ASTM D3417 / D3418	°F	307	ISO 11357	°C	153
Vicat Softening Temperature, B	ASTM 1525-00 modified	°F	347			175
Heat Deflection Temp. by TMA at 1.8 Mpa		°F	290	ISO 75 Modified	°C	145
Shrinkage at 302°F (150°C)	ASTM D1204	%	0.02		%	0.02%
Brittleness Temperature	ASTM D746	°F	-211		°C	-135

Physical

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Density	ASTM D792	slug/ft³	2.6	ISO 1183	kg/m³	1344
Water Absorption, 24 hrs.	ASTM D570	% change	0.28	ISO 62	% change	0.28
Surface Energy(1st surface/ 2nd surface)	ASTM D5946-01	-	35/35			
Surface Tension(1st surface/ 2nd surface)	Dyne Pens	Dyne	36-38/36-38			

Optical

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	10.5	ISO 2813	-	10.5

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Black Isolation Layer (0.22mm)

Electrical

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Dielectric Strength in oil, short time @ 72°F (23°C), 10 mils	ASTM D149-97a Method A	kV/mil	1.5	IEC 60243	kV/mil	59
Dielectric Constant						
@ 60 Hz	ASTM D150	-	2.9	IEC 60250	-	2.9
@1,000,000 Hz	ASTM D150	-	2.8	IEC 60250	-	2.8
Dissipation Factor						
@ 60 Hz	ASTM D150	-	0.0026	IEC 60250	-	0.0026
@1,000,000 Hz	ASTM D150	-	0.0117	IEC 60250	-	0.0117
Volume Resistivity	ASTM D257	Ω-cm	1.0E+17	IEC 60093	Ω-cm	1.0E+17
Surface Resistivity	ASTM D257	Ω/square	1.0E+16	IEC 60093	Ω/square	1.0E+16
Arc Resistance, Tungsten Electrodes	ASTM D495	s	64			