

SABIC Innovative Plastics Valox® FR1 Polybutylene Terephthalate Film, Flame Retardant

Category : Polymer , Film , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT) , Polybutylene Terephthalate (PBT), Flame Retardant

Material Notes:

Valox FR-1 film is a flame retardant thermoplastic polybutylene, terephthalite film offering UL94 VTM-0 performance down to 125 microns and good temperature performance. Valox FR-1 film's outstanding dielectric strength and ease of fabrication (ie: thermoforming, embossing, clean-edge die- cutting, folding and bending) makes it very suitable for a wide range of electrical, electronic and medical applications. Information provided by SABIC Innovative Plastics

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-FR1-Polybutylene-Terephthalate-Film-Flame-Retardant.php

Physical Properties	Metric	English	Comments
Density	1.34 g/cc	0.0484 lb/in ³	ASTM D792
Water Absorption	0.48 %	0.48 %	24 hrs; ASTM D570
Surface Tension	34 - 36 dynes/cm	34 - 36 dynes/cm	2nd surface; units: Dyne; Dyne Pens
	>= 44 dynes/cm	>= 44 dynes/cm	1st surface; units: Dyne; Dyne Pens

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	41.4 MPa	6000 psi	ASTM D882
Tensile Strength, Yield	49.6 MPa	7190 psi	ASTM D882
Elongation at Break	57 %	57 %	ASTM D882
Tensile Modulus	1.91 GPa	277 ksi	ASTM D882
Gardner Impact	9.49 J @Thickness 0.762 mm	7.00 ft-lb @Thickness 0.0300 in	ASTM D3029
Impact Test	12.2 J	9.00 ft-lb	Puncture Resistance, Dynatup; ASTM D3763
Tear Strength	39.8 kN/m	227 pli	propagation; ASTM D1922
	256 kN/m	1460 pli	initiation; ASTM D1004

Thermal Properties	Metric	English	Comments
CTE, linear	55.8 Åµm/m-Å°C	31.0 Åµin/in-Å°F	ASTM E831
Specific Heat Capacity	1.26 J/g-Å°C	0.301 BTU/lb-Å°F	ASTM E1269
	0.200 W/m-K	1.39 BTU-in/hr-ftÅ²-	

Thermal Properties	Metric	English	ASTM D5470 Comments
Deflection Temperature at 1.8 MPa (264 psi)	78.9 Å°C	174 Å°F	TMA
Vicat Softening Point	174.4 Å°C	345.9 Å°F	ASTM 1525-00 modified
Brittleness Temperature	-135 Å°C	-211 Å°F	ASTM D746
Glass Transition Temp, Tg	28.8 Å°C	83.9 Å°F	ASTM D3417/D3418
Flammability, UL94	V-2	V-2	VTM
	@Thickness 0.0750 - 0.130 mm	@Thickness 0.00295 - 0.00512 in	
	V-0	V-0	VTM
	@Thickness 0.130 - 0.250 mm	@Thickness 0.00512 - 0.00984 in	
	V-0	V-0	VTM
	@Thickness 0.500 - 0.625 mm	@Thickness 0.0197 - 0.0246 in	
	V-0	V-0	VTM
	@Thickness >=0.625 mm	@Thickness >=0.0246 in	
Shrinkage	0.40 %	0.40 %	ASTM D1204
	@Temperature 150 Å°C	@Temperature 302 Å°F	

Optical Properties	Metric	English	Comments
Gloss	5.0 %	5.0 %	over Flat Black min/max @ 60Å°; ASTM D523-60
	0.10 - 17 %	0.10 - 17 %	Matte @ 85Å°; ASTM D523-85
	0.10 - 25 %	0.10 - 25 %	Matte @ 85Å°; ASTM D523-85
Yellow Index	49 %	49 %	ASTM D1925
Transmission, Visible	15 %	15 %	ASTM D1003

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+17 ohm-cm	1.00e+17 ohm-cm	ASTM D257
Surface Resistivity per Square	1.00e+16 ohm	1.00e+16 ohm	ASTM D257
Dielectric Constant	2.8	2.8	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Electrical Properties	Metric	English	Comments
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	ASTM D150
Dielectric Strength	42.9 kV/mm @Temperature 23.0 Â°C	1090 kV/in @Temperature 73.4 Â°F	in oil, short time. 0.25mm; ASTM D149-97a Method A
Dissipation Factor	0.0015 @Frequency 60.0 Hz	0.0015 @Frequency 60.0 Hz	ASTM D150
	0.010 @Frequency 1.00e+6 Hz	0.010 @Frequency 1.00e+6 Hz	ASTM D150
Arc Resistance	21 sec	21 sec	Tungsten; ASTM D495

Descriptive Properties	Value	Comments
Fold Endurance (folds)	2000	MIT; ASTM D2176-69; double, 0.175mm
	83	MIT; ASTM D2176-69; double, 0.625mm
Nominal Gauge Variation (%)	10	0.075 - 0.250mm
	5	0.375 - 0.750mm
Pencil Hardness	2B-B	
Surface Energy	35	2nd surface; ASTM D5946-01
	36	1st surface; ASTM D5946-01

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