SABIC Innovative Plastics Lexan® 943X PC Copolymer

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan* 943X is a UV stabilized medium flow impact modified injection molding (IM) grade. This resin offers UL94 V0 @ 1.5mm flame retardancy based on non-bromine, non-chlorine FR systems, low temperature ductility characteristics and excellent processability with opportunities for shorter IM cycle times compared to standard PC. Lexan* 943X resin is a product available in a wide range of opaque colors and may be an excellent candidate for a wide range of applications.

Order this product through the following link:
http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-943X-PC-Copolymer.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.18 g/cc	1.18 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in³	ISO 1183
Moisture Absorption	0.150 %	0.150 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.35 %	0.35 %	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0080 cm/cm @Thickness 3.20 mm	0.0040 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0040 - 0.0080 cm/cm @Thickness 3.20 mm	0.0040 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	10 g/10 min @Load 1.20 kg, Temperature 300 °C	10 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	9.0 g/10 min @Load 1.20 kg, Temperature 300 °C	9.0 g/10 min @Load 2.65 lb, Temperature 572 °F	MVR [cm^3/10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	60.0 MPa	8700 psi	Type I, 50 mm/min; ASTM D638
	60.0 MPa	8700 psi	50 mm/min; ISO 527
Tensile Strength, Yield	55.0 MPa	7980 psi	50 mm/min; ISO 527
	58.0 MPa	8410 psi	Type I, 50 mm/min; ASTM D638
Elongation at Break	125 %	125 %	50 mm/min; ISO 527
	130 %	130 %	Type I, 50 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments
Elongation at Yield	6.0 %	6.0 %	Type I, 50 mm/min; ASTM D638
	6.0 %	6.0 %	50 mm/min; ISO 527
Tensile Modulus	2.10 GPa	305 ksi	50 mm/min; ASTM D638
	2.10 GPa	305 ksi	1 mm/min; ISO 527
Flexural Yield Strength	85.0 MPa	12300 psi	2 mm/min; ISO 178
	89.0 MPa	12900 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.06 GPa	299 ksi	1.3 mm/min, 50 mm span; ASTM D790
	2.20 GPa	319 ksi	2 mm/min; ISO 178
Izod Impact, Notched	8.00 J/cm	15.0 ft-lb/in	ASTM D256
	6.50 J/cm @Temperature -30.0 °C	12.2 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Notched (ISO)	70.0 kJ/m²	33.3 ft-lb/in²	80*10*3; ISO 180/1A
	50.0 kJ/m² @Temperature -30.0 °C	23.8 ft-lb/in² @Temperature -22.0 °F	80*10*3; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	80*10*3; ISO 180/1U
Charpy Impact Unnotched	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	7.50 J/cm²	35.7 ft-lb/in²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	6.00 J/cm² @Temperature -30.0 °C	28.6 ft-lb/in² @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	50.0 J @Temperature 23.0 °C	36.9 ft-lb @Temperature 73.4 °F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	65.0 µm/m-°C @Temperature -40.0 -	36.1 µin/in-°F @Temperature -40.0 -	ASTM E 831

Thermal Properties	Metric	English	Comments
	40.0 °C	104 °F	
	72.0 µm/m-°C @Temperature 23.0 - 80.0 °C	40.0 µin/in-°F @Temperature 73.4 - 176 °F	ISO 11359-2
CTE, linear, Transverse to Flow	65.0 µm/m-°C @Temperature -40.0 - 40.0 °C	36.1 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
	77.0 µm/m-°C @Temperature 23.0 - 80.0 °C	42.8 µin/in-°F @Temperature 73.4 - 176 °F	ISO 11359-2
Deflection Temperature at 0.46 MPa (66 psi)	135 °C @Thickness 3.20 mm	275 °F @Thickness 0.126 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	120 °C @Thickness 3.20 mm	248 °F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	140 °C	284 °F	Rate B/50; ASTM D1525
	140 °C	284 °F	Rate B/120; ISO 306
UL RTI, Electrical	125 °C	257 °F	UL 746B
UL RTI, Mechanical with Impact	115 °C	239 °F	UL 746B
UL RTI, Mechanical without Impact	120 °C	248 °F	UL 746B
Flammability, UL94	V-0 @Thickness 1.50 mm	V-0 @Thickness 0.0591 in	UL 94
	5VA @Thickness 3.00 mm	5VA @Thickness 0.118 in	UL 94
Glow Wire Test	825 °C	1520 °F	IEC 60695-2-13
	960 °C @Thickness 1.00 mm	1760 °F @Thickness 0.0394 in	IEC 60695-2-12

Electrical Properties	Metric	English	Comments
Dielectric Constant	2.9 @Frequency 1.00e+6 Hz	2.9 @Frequency 1.00e+6 Hz	ASTM D150
	2.95 @Frequency 50.0 - 60.0 Hz	2.95 @Frequency 50.0 - 60.0 Hz	ASTM D150

Electrical Properties	Metric	English	Comments
Dielectric Strength	16.0 kV/mm @Thickness 3.20 mm	406 kV/in @Thickness 0.126 in	in oil; IEC 60243-1
	17.0 kV/mm @Thickness 3.20 mm	432 kV/in @Thickness 0.126 in	in oil; ASTM D149
Dissipation Factor	0.0024 @Frequency 50.0 - 60.0 Hz	0.0024 @Frequency 50.0 - 60.0 Hz	ASTM D150
	0.0085 @Frequency 1.00e+6 Hz	0.0085 @Frequency 1.00e+6 Hz	ASTM D150
Comparative Tracking Index	175 - 250 V	175 - 250 V	UL 746A
	225 V	225 V	IEC 60112
Hot Wire Ignition, HWI	60 - 120 sec	60 - 120 sec	UL 746A
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	UL 746A

Descriptive Properties	Value	Comments
Ball Pressure Test, 125°C +/- 2°C	PASSES	IEC 60695-10-2

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