

SABIC Innovative Plastics Lexan® 503 PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

10% GR PC. Optimum combination of high modulus plus excellent impact strength and flame retardance. UV-stabilized.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-503-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.25 g/cc	1.25 g/cc	ASTM D792
Density	1.245 g/cc	0.04498 lb/in ³	ASTM D792
Water Absorption	0.12 % @Time 86400 sec	0.12 % @Time 24.0 hour	ASTM D570
Moisture Absorption at Equilibrium	0.31 %	0.31 %	ASTM D570
Linear Mold Shrinkage, Flow	0.0020 - 0.0040 cm/cm @Thickness 3.20 mm	0.0020 - 0.0040 in/in @Thickness 0.126 in	SABIC Method

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	85	85	ASTM D785
Hardness, Rockwell R	124	124	ASTM D785
Tensile Strength at Break	55.0 MPa	7980 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	66.0 MPa	9570 psi	Type I, 5 mm/min; ASTM D638
Elongation at Break	15 %	15 %	Type I, 5 mm/min; ASTM D638
Elongation at Yield	8.0 %	8.0 %	Type I, 5 mm/min; ASTM D638
Flexural Yield Strength	103 MPa	14900 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	3.44 GPa	499 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	1.06 J/cm	1.99 ft-lb/in	ASTM D256
Izod Impact, Unnotched	21.36 J/cm	40.02 ft-lb/in	ASTM D4812
Tensile Impact Strength	157 kJ/m ²	74.7 ft-lb/in ²	Type S; ASTM D1822
Dart Drop, Total Energy	101 J	74.5 ft-lb	ASTM D3029
Taber Abrasion, mg/1000 Cycles	11	11	CS-17, 1 kg; ASTM D1044

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	32.4 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	18.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 95.0 $^{\circ}\text{C}$	@Temperature -40.0 - 203 $^{\circ}\text{F}$	
Specific Heat Capacity	1.21 J/g- $^{\circ}\text{C}$	0.289 BTU/lb- $^{\circ}\text{F}$	ASTM C351
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² - $^{\circ}\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	146 $^{\circ}\text{C}$	295 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	142 $^{\circ}\text{C}$	288 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	154 $^{\circ}\text{C}$	309 $^{\circ}\text{F}$	Rate B/50; ASTM D1525
UL RTI, Electrical	120 $^{\circ}\text{C}$	248 $^{\circ}\text{F}$	UL 746B
UL RTI, Mechanical with Impact	110 $^{\circ}\text{C}$	230 $^{\circ}\text{F}$	UL 746B
UL RTI, Mechanical without Impact	125 $^{\circ}\text{C}$	257 $^{\circ}\text{F}$	UL 746B
Flammability, UL94	V-0	V-0	UL 94
	@Thickness 1.52 mm	@Thickness 0.0598 in	
	5VA	5VA	UL 94
	@Thickness 2.99 mm	@Thickness 0.118 in	
Oxygen Index	36 %	36 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00\text{e}+17$ ohm-cm	$\geq 1.00\text{e}+17$ ohm-cm	ASTM D257
Dielectric Constant	3.05	3.05	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.1	3.1	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	17.7 kV/mm	450 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.00080	0.00080	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	

Electrical Properties	Metric	English	Comments
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	ASTM D150
Arc Resistance	0.00 - 60 sec	0.00 - 60 sec	Tungsten; ASTM D495
Comparative Tracking Index	100 - 175 V	100 - 175 V	UL 746A
Hot Wire Ignition, HWI	60 - 120 sec	60 - 120 sec	UL 746A
High Amp Arc Ignition, HAI	60 - 120 arcs	60 - 120 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min	3.15 - 5.91 in/min	UL 746A

Descriptive Properties	Value	Comments
Specific Volume	0.8cm ³ /g	ASTM D792
UV-light, water exposure/immersion	F1	UL 746C

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