

SABIC Innovative Plastics Lexan® OQ3820 PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

High Viscosity, UV-stabilized grade for ophthalmic lenses.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-OQ3820-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D792
Density	1.20 g/cc	0.0434 lb/in ³	ISO 1183
Moisture Absorption	0.150 %	0.150 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.32 %	0.32 %	ISO 62
Linear Mold Shrinkage, Flow	0.0060 - 0.0080 cm/cm @Thickness 3.20 mm	0.0060 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	7.4 g/10 min @Load 1.20 kg, Temperature 300 °C	7.4 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Melt Index of Compound	6.0 g/10 min @Load 1.20 kg, Temperature 300 °C	6.0 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	71.0 MPa	10300 psi	50 mm/min; ISO 527
	72.0 MPa	10400 psi	Type I, 50 mm/min; ASTM D638
Tensile Strength, Yield	61.0 MPa	8850 psi	50 mm/min; ISO 527
	62.0 MPa	8990 psi	Type I, 50 mm/min; ASTM D638
Elongation at Break	125 %	125 %	Type I, 50 mm/min; ASTM D638
	140 %	140 %	50 mm/min; ISO 527
Elongation at Yield	6.0 %	6.0 %	50 mm/min; ISO 527
	6.3 %	6.3 %	Type I, 50 mm/min; ASTM D638

Tensile Modulus Mechanical Properties	2.27 GPa Metric	329 ksi English	50 mm/min; ASTM D638 Comments
	2.40 GPa	348 ksi	1 mm/min; ISO 527
Flexural Yield Strength	93.0 MPa	13500 psi	1.3 mm/min, 50 mm span; ASTM D790
	94.0 MPa	13600 psi	2 mm/min; ISO 178
Flexural Modulus	2.20 GPa	319 ksi	2 mm/min; ISO 178
	2.41 GPa	350 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	9.18 J/cm	17.2 ft-lb/in	ASTM D256
	0.140 J/cm	0.262 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Notched (ISO)	70.0 kJ/m ²	33.3 ft-lb/in ²	80*10*3; ISO 180/1A
	12.0 kJ/m ²	5.71 ft-lb/in ²	80*10*3; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	NB	NB	80*10*3; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	7.50 J/cm ²	35.7 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	1.50 J/cm ²	7.14 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Dart Drop, Total Energy	85.0 J	62.7 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	76.0 µm/m-°C	42.2 µin/in-°F	ISO 11359-2
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
	77.4 µm/m-°C	43.0 µin/in-°F	ASTM E 831

Thermal Properties	Metric @Temperature -40.0 - 40.0 °C	English @Temperature -40.0 - 104 °F	Comments
CTE, linear, Transverse to Flow	77.4 µm/m-°C	43.0 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
	78.9 µm/m-°C	43.8 µin/in-°F	ISO 11359-2
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
Deflection Temperature at 0.46 MPa (66 psi)	139 °C	282 °F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	126 °C	259 °F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	129 °C	264 °F	
	@Thickness 3.20 mm	@Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	143 °C	289 °F	Rate B/50; ISO 306
	144 °C	291 °F	Rate B/120; ISO 306
	150 °C	302 °F	Rate B/50; ASTM D1525

Descriptive Properties	Value	Comments
Ball Pressure Test, 75°C +/- 2°C	P	IEC 60695-10-2

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