

LEXAN™ OQ3820 resin

Polycarbonate
SABIC Innovative Plastics

Message:
High Viscosity, UV-stabilized grade for ophthalmic lenses.

General Information	
Additive	UV Stabilizer
Features	High Viscosity
Uses	Lenses
Processing Method	Injection Molding
Multi-Point Data	Thermal Conductivity vs. Temperature (ASTM E1530) Viscosity vs. Shear Rate (ASTM D3835)

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.19	g/cm ³	ASTM D792
--	1.20	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	7.4	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	6.40	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal Method
Flow : 3.20 mm	0.60 to 0.80	%	
Across Flow : 3.20 mm	0.50 to 0.70	%	
Water Absorption			ISO 62
Saturation, 23°C	0.32	%	
Equilibrium, 23°C, 50% RH	0.15	%	

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2280	MPa	ASTM D638
--	2400	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	62.0	MPa	ASTM D638
Yield	61.0	MPa	ISO 527-2/50
Break ³	72.0	MPa	ASTM D638
Break	71.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	6.3	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Break ⁵	130	%	ASTM D638

Break	140	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2410	MPa	ASTM D790
-- ⁷	2200	MPa	ISO 178
Flexural Stress			
--	94.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	93.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	15	kJ/m ²	
23°C	75	kJ/m ²	
Charpy Unnotched Impact Strength ¹⁰			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
-30°C	14	J/m	ASTM D256
23°C	920	J/m	ASTM D256
-30°C ¹¹	12	kJ/m ²	ISO 180/1A
23°C ¹²	70	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ¹³			ISO 180/1U
-30°C	No Break		
23°C	No Break		
Instrumented Dart Impact (23°C, Total Energy)	85.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	139	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	129	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁴	126	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	150	°C	ASTM D1525 ¹⁵
--	143	°C	ISO 306/B50
--	144	°C	ISO 306/B120
Ball Pressure Test (75°C)	Pass		IEC 60695-10-2
CLTE			
Flow : -40 to 40°C	7.7E-5	cm/cm/°C	ASTM E831
Flow : -40 to 40°C	7.6E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	7.7E-5	cm/cm/°C	ASTM E831
Transverse : -40 to 40°C	7.9E-5	cm/cm/°C	ISO 11359-2
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	

Drying Time, Maximum	48	hr
Suggested Max Moisture	0.020	%
Suggested Shot Size	40 to 60	%
Rear Temperature	288 to 310	°C
Middle Temperature	299 to 321	°C
Front Temperature	310 to 332	°C
Nozzle Temperature	304 to 327	°C
Processing (Melt) Temp	310 to 332	°C
Mold Temperature	82.2 to 116	°C
Back Pressure	0.345 to 0.689	MPa
Screw Speed	40 to 70	rpm
Vent Depth	0.025 to 0.076	mm

NOTE

1. 50 mm/min
2. Type I, 50 mm/min
3. Type I, 50 mm/min
4. Type I, 50 mm/min
5. Type I, 50 mm/min
6. 1.3 mm/min
7. 2.0 mm/min
8. 1.3 mm/min
9. 80*10*3 sp=62mm
10. 80*10*3 sp=62mm
11. 80*10*3
12. 80*10*3
13. 80*10*3
14. 120*10*4 mm
15. Rate B (120°C/h), Loading 2 (50 N)

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