



CYCOLOY* CX7259 Resin

SABIC Innovative Plastics Asia Pacific - Polycarbonate

Monday, November 17, 2008

General Information

Product Description

Cycloy resin grade CX7259 is a flame retardant impact modified polycarbonate blend aiming at ultra thin wall designs. It is listed as UL-94 V1 at 0.5mm & V0 at 0.6mm with excellent flow and balanced heat resistance ideally for many thin wall applications.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific
Additive	• Impact Modifier
Features	• Flame Retardant • Impact Modified • High Flow • Medium Heat Resistance
Uses	• Thin-walled Parts
Forms	• Pellets
Processing Method	• Injection Molding

ASTM and ISO Properties¹

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity			
--	1.20	1.20	ASTM D792
--	1.20 g/cm ³	1.20 g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (260°C/2.16 kg)	23 g/10 min	23 g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
260°C/2.16 kg	1.16 in ³ /10min	19.0 cm ³ /10min	
300°C/1.2 kg	1.71 in ³ /10min	28.0 cm ³ /10min	
Molding Shrinkage - Flow (0.126 in (3.20 mm))	0.0050 to 0.0070 in/in	0.50 to 0.70 %	Internal Method
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.17 %	0.17 %	
Equilibrium, 73°F (23°C), 50% RH	0.10 %	0.10 %	



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Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ²	381000 psi	2630 MPa	ASTM D638
--	377000 psi	2600 MPa	ISO 527-2/1
Tensile Strength			
Yield ³	8670 psi	59.8 MPa	ASTM D638
Yield	9280 psi	64.0 MPa	ISO 527-2/50
Break ³	7700 psi	53.1 MPa	ASTM D638
Break	7110 psi	49.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ³	3.8 %	3.8 %	ASTM D638
Yield	3.8 %	3.8 %	ISO 527-2/50
Break ³	80 %	80 %	ASTM D638
Break	70 %	70 %	ISO 527-2/50
Flexural Modulus			
1.97 in (50.0 mm) Span ⁴	381000 psi	2630 MPa	ASTM D790
-- ⁵	387000 psi	2670 MPa	ISO 178
Flexural Strength			
-- ^{5, 6}	14200 psi	98.0 MPa	ISO 178
Yield, 1.97 in (50.0 mm) Span ⁴	13900 psi	96.0 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength ⁷			ISO 179/1eA
-22°F (-30°C)	4.28 ft-lb/in ²	9.00 kJ/m ²	
73°F (23°C)	4.76 ft-lb/in ²	10.00 kJ/m ²	
Charpy Unnotched Impact Strength ⁷			ISO 179/1eU
-22°F (-30°C)	No Break	No Break	
73°F (23°C)	No Break	No Break	
Notched Izod Impact			
-22°F (-30°C)	1.29 ft-lb/in	69.0 J/m	ASTM D256
73°F (23°C)	2.38 ft-lb/in	127 J/m	ASTM D256
-22°F (-30°C) ⁸	4.28 ft-lb/in ²	9.00 kJ/m ²	ISO 180/1A
73°F (23°C) ⁸	4.76 ft-lb/in ²	10.00 kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ⁸			ISO 180/1U
-22°F (-30°C)	No Break	No Break	
73°F (23°C)	No Break	No Break	
Instrumented Dart Impact			ASTM D3763
73°F (23°C), Total Energy	620 in-lb	70.0 J	



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Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
264 psi (1.8 MPa), Unannealed, 0.252 in (6.40 mm)	199 °F	93.0 °C	ASTM D648
264 psi (1.8 MPa), Unannealed, 2.52 in (64.0 mm) Span ⁹	185 °F	85.0 °C	ISO 75-2/Af
Vicat Softening Temperature			
--	214 °F	101 °C	ASTM D1525 ¹⁰ ISO 306/B50
--	219 °F	104 °C	ISO 306/B120
CLTE			
Flow: -40 to 104°F (-40 to 40°C)	0.000039 in/in/°F	0.000070 cm/cm/°C	ASTM E831
Flow: -40 to 104°F (-40 to 40°C)	0.000038 in/in/°F	0.000069 cm/cm/°C	ISO 11359-2
Transverse: -40 to 104°F (-40 to 40°C)	0.000041 in/in/°F	0.000073 cm/cm/°C	ASTM E831
Transverse: -40 to 104°F (-40 to 40°C)	0.000040 in/in/°F	0.000072 cm/cm/°C	ISO 11359-2

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL			UL 94
0.0118 in (0.300 mm)	V-2	V-2	
0.0197 in (0.500 mm)	V-1	V-1	
0.0236 in (0.600 mm)	V-0	V-0	

Processing Information			
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	194 °F	90.0 °C	
Drying Time	4.0 hr	4.0 hr	
Suggested Max Moisture	0.040 %	0.040 %	
Suggested Shot Size	40 to 80 %	40 to 80 %	
Hopper Temperature	140 to 176 °F	60.0 to 80.0 °C	
Rear Temperature	500 to 572 °F	260 to 300 °C	
Middle Temperature	500 to 572 °F	260 to 300 °C	
Front Temperature	509 to 572 °F	265 to 300 °C	
Nozzle Temperature	509 to 572 °F	265 to 300 °C	
Processing (Melt) Temp	518 to 572 °F	270 to 300 °C	
Mold Temperature	140 to 194 °F	60.0 to 90.0 °C	
Back Pressure	43.5 to 102 psi	0.300 to 0.700 MPa	
Screw Speed	40 to 70 rpm	40 to 70 rpm	
Vent Depth	0.0015 to 0.0030 in	0.038 to 0.076 mm	

Notes

¹ Typical properties: these are not to be construed as specifications.

² 0.20 in/min (5.0 mm/min)

³ Type I, 2.0 in/min (50 mm/min)

⁴ 0.051 in/min (1.3 mm/min)

⁵ 0.079 in/min (2.0 mm/min)

⁶ Yield

⁷ 80*10*3 sp=62mm

⁸ 80*10*3

⁹ 80*10*4 mm

¹⁰ Rate B (120°C/h), Loading 2 (50 N)

