

CYCOLOY™ C3650 resin

Polycarbonate + ABS

SABIC Innovative Plastics

Message:

Flame retardant PC/ABS blend using non-brominated and non-chlorinated flame retardant systems, offering high impact and excellent extrusion and thermoforming characteristics. Halogen free according to DIN VDE 0472/815 for cable channels

General Information	
UL YellowCard	E121562-221036
Additive	Flame retardancy
Features	Chlorine Free
	Impact resistance, high
	Halogen-free
	Bromine-free
	Flame retardancy
Uses	Wire and cable applications
	Shell
Agency Ratings	DIN VDE 0472 part 815
Processing Method	Extrusion blow molding
	Profile extrusion molding
	Injection molding
Multi-Point Data	Coefficient of Thermal Expansion vs. Temperature (ASTM E831)
	Flexural DMA (ASTM D4065)
	Pressure-Volume-Temperature (PVT - Zoller Method)
	Shear DMA (ASTM D4065)
	Specific Heat vs. Temperature (ASTM D3417)
	Tensile Fatigue
	Tensile Stress vs. Strain (ASTM D638)
	Thermal Conductivity vs. Temperature (ASTM E1530)
	Viscosity vs. Shear Rate (ASTM D3835)

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.20	g/cm³	ASTM D792
--	1.18	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (260°C/5.0 kg)	8.5	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (260°C/5.0 kg)	8.00	cm³/10min	ISO 1133

Molding Shrinkage - Flow (3.20 mm)	0.40 - 0.60	%	Internal method
Water Absorption (Saturation, 23°C)	0.60	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	124		ISO 2039-2
Ball Indentation Hardness (H 358/30)	113	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2860	MPa	ASTM D638
--	2600	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	64.8	MPa	ASTM D638
Yield	55.0	MPa	ISO 527-2/5
Yield	65.0	MPa	ISO 527-2/50
Fracture ³	51.0	MPa	ASTM D638
Fracture	50.0	MPa	ISO 527-2/5
Fracture	55.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	4.9	%	ASTM D638
Yield	3.0	%	ISO 527-2/5
Yield	4.5	%	ISO 527-2/50
Fracture ⁵	35	%	ASTM D638
Fracture	55	%	ISO 527-2/5
Fracture	> 50	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2690	MPa	ASTM D790
-- ⁷	2700	MPa	ISO 178
Flexural Stress			
--	100	MPa	ISO 178
Yield, 50.0mm span ⁸	101	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	13	kJ/m ²	ISO 179/1eA
23°C	48	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
23°C	690	J/m	ASTM D256
-30°C ¹⁰	13	kJ/m ²	ISO 180/1A
0°C ¹¹	15	kJ/m ²	ISO 180/1A
23°C ¹²	45	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	65.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			

0.45 MPa, unannealed, 3.20mm	100	°C	ASTM D648
0.45 MPa, unannealed, 100 mm span ¹³	102	°C	ISO 75-2/Be
1.8 MPa, unannealed, 3.20mm	88.9	°C	ASTM D648
1.8 MPa, unannealed, 100 mm span ¹⁴	91.0	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	110	°C	ASTM D1525, ISO 306/B120 11 ¹⁵
--	108	°C	ISO 306/B50
Linear thermal expansion coefficient			
Flow: -40 to 40°C	7.2E-5	cm/cm/°C	ASTM E831
Flow: 23 to 60°C	8.0E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	7.2E-5	cm/cm/°C	ASTM E831
Lateral: 23 to 60°C	8.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.20	W/m/K	ISO 8302
RTI Elec	60.0	°C	UL 746
RTI Imp	60.0	°C	UL 746
RTI	60.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Dielectric Strength			IEC 60243-1
0.800mm, in oil	35	kV/mm	IEC 60243-1
1.60mm, in oil	25	kV/mm	IEC 60243-1
3.20mm, in oil	17	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
50 Hz	2.80		IEC 60250
60 Hz	2.80		IEC 60250
1 MHz	2.70		IEC 60250
Dissipation Factor			
50 Hz	6.0E-3		ASTM D150
60 Hz	6.0E-3		ASTM D150
50 Hz	4.0E-3		IEC 60250
60 Hz	4.0E-3		IEC 60250
1 MHz	6.0E-3		IEC 60250
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	V-0		UL 94
2.49 mm	5VB		UL 94
Oxygen Index	37	%	ISO 4589-2
Extrusion instructions			

Extrusion Blow Molding Parameters:

Adapter - Zone 5 Temperature: 227 - 249 °C

Barrel - Zone 1 Temperature: 204 - 232 °C

Barrel - Zone 2 Temperature: 216 - 243 °C

Barrel - Zone 3 Temperature: 216 - 243 °C

Barrel - Zone 4 Temperature: 221 - 249 °C

Die Temperature: 238 - 249 °C

Drying Temperature: 79 - 91 °C

Drying Time: 2 - 4 hrs

Drying Time (Cumulative): 8 hrs

Head - Zone 6 - Top Temperature: 227 - 249 °C

Head - Zone 7 - Bottom Temperature: 227 - 249 °C

Maximum Moisture Content: 0 - 0.02 %

Melt Temperature (Parison): 227 - 249 °C

Mold Temperature: 66 - 88 °C

Profile Extrusion Parameters:

Adapter Temperature: 227 - 271 °C

Barrel - Zone 1 Temperature: 204 - 249 °C

Barrel - Zone 2 Temperature: 216 - 260 °C

Barrel - Zone 3 Temperature: 216 - 260 °C

Barrel - Zone 4 Temperature: 227 - 271 °C

Calibrator Temperature: 60 - 82 °C

Die Temperature: 227 - 271 °C

Drying Temperature: 79 - 91 °C

Drying Time: 2 - 4 hrs

Drying Time (Cumulative): 8 hrs

Melt Temperature: 227 - 271 °C

Minimum Moisture Content: 0 - 0.02 %

NOTE

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

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