CYCOLOY* CY6414 Resin

Acrylonitrile Butadiene Styrene + PC

SABIC Innovative Plastics Europe

IDES | Prospector

Product Description

Flame retardant PC/ABS blend using non-brominated and non-chlorinated flame retardant systems, offering high heat for application in appliances, lighting and electrical market.

General

Material Status	• Commercial: Active	
Availability	• Europe	
Additive	• Flame Retardant	
Features	• Bromine Free • Chlorine Free	• Flame Retardant • High Heat Resistance
Uses	• Appliances	• Electrical/Electronic Applications
RoHS Compliance	• RoHS Compliant	
Processing Method	• Injection Molding	

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.18 g/cm³	1.18 g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (260°C/5.0 kg)	0.793 in³/10min	13.0 cm³/10min	ISO 1133
Molding Shrinkage - Flow (0.126 in (3.20 mm))	0.0040 to 0.0080 in/in	0.40 to 0.80 %	Internal Method
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.30 %	0.30 %	
Equilibrium, 73°F (23°C), 50% RH	0.10 %	0.10 %	
Mechanical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Tensile Modulus			
-- [2]	338000 psi	2330 MPa	ASTM D638
--	352000 psi	2430 MPa	ISO 527-2/1
Tensile Strength			
Yield [3]	9280 psi	64.0 MPa	ASTM D638
Yield	9630 psi	66.4 MPa	ISO 527-2/50
Break [3]	8990 psi	62.0 MPa	ASTM D638
Break	9850 psi	67.9 MPa	ISO 527-2/50
Tensile Elongation			
Yield [3]	6.0 %	6.0 %	ASTM D638
Yield	5.7 %	5.7 %	ISO 527-2/50
Break [3]	85 %	85 %	ASTM D638
Break	> 100 %	> 100 %	ISO 527-2/50
Flexural Modulus [4]	358000 psi	2470 MPa	ISO 178
Flexural Strength [4, 5]	14000 psi	96.7 MPa	ISO 178
Impact	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Charpy Notched Impact Strength [6]			ISO 179/1eA
-22°F (-30°C)	5.7 ft·lb/in²	12 kJ/m²	
32°F (0°C)	8.1 ft·lb/in²	17 kJ/m²	
73°F (23°C)	13 ft·lb/in²	28 kJ/m²	
Notched Izod Impact			
-22°F (-30°C)	4.0 ft·lb/in	220 J/m	ASTM D256
32°F (0°C)	9.8 ft·lb/in	530 J/m	ASTM D256
73°F (23°C)	15 ft·lb/in	800 J/m	ASTM D256
-22°F (-30°C) [7]	5.7 ft·lb/in²	12 kJ/m²	ISO 180/1A
32°F (0°C) [7]	6.7 ft·lb/in²	14 kJ/m²	ISO 180/1A
73°F (23°C) [7]	25 ft·lb/in²	52 kJ/m²	ISO 180/1A

Revision History
Document Created: Wednesday, December 21, 2011
Added to Prospector: April, 2008
Last Updated: 8/6/2010

CYCOLOY* CY6414 Resin
Acrylonitrile Butadiene Styrene + PC
SABIC Innovative Plastics Europe

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)	244 °F	118 °C	ASTM D648
264 psi (1.8 MPa), Unannealed, 2.52 in (64.0 mm) Span [8]	242 °F	116 °C	ISO 75-2/Af
Vicat Softening Temperature			
--	272 °F	134 °C	ISO 306/B50
--	274 °F	135 °C	ISO 306/B120
Ball Pressure Test			IEC 60695-10-2
257°F (125°C) [9]	Pass	Pass	
257°F (125°C)	Pass	Pass	
CLTE			ISO 11359-2
Flow: -40 to 104°F (-40 to 40°C)	0.000039 in/in/°F	0.000070 cm/cm/°C	
Transverse: -40 to 104°F (-40 to 40°C)	0.000039 in/in/°F	0.000070 cm/cm/°C	

Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Dielectric Constant			ASTM D150
1 kHz	3.01	3.01	
1 MHz	2.95	2.95	
Dissipation Factor			
1 kHz	0.0017	0.0017	ASTM D150
1 MHz	0.0088	0.0088	ASTM D150 IEC 60250

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL			UL 94
0.0472 in (1.20 mm)	V-0	V-0	
0.0984 in (2.50 mm)	5VB	5VB	
Glow Wire Flammability Index [9]			IEC 60695-2-12
0.0295 in (0.750 mm)	1760 °F	960 °C	
Glow Wire Ignition Temperature [9]			IEC 60695-2-13
0.0295 in (0.750 mm)	1430 °F	775 °C	
0.0591 in (1.50 mm)	1430 °F	775 °C	
0.118 in (3.00 mm)	1430 °F	775 °C	
Oxygen Index	32 %	32 %	ISO 4589-2

UL	Nominal Value (English)	Nominal Value (SI)	Test Method
Comparative Tracking Index (CTI) (PLC)	PLC 3	PLC 3	UL 746
Hot-wire Ignition (HWI) (PLC)	PLC 2	PLC 2	UL 746
High Amp Arc Ignition (HAI) (PLC)	PLC 1	PLC 1	UL 746

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	194 to 212 °F	90.0 to 100 °C
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.020 %	0.020 %
Hopper Temperature	140 to 176 °F	60.0 to 80.0 °C
Rear Temperature	410 to 500 °F	210 to 260 °C
Middle Temperature	446 to 554 °F	230 to 290 °C
Front Temperature	464 to 572 °F	240 to 300 °C
Nozzle Temperature	446 to 554 °F	230 to 290 °C
Processing (Melt) Temp	482 to 572 °F	250 to 300 °C
Mold Temperature	140 to 194 °F	60.0 to 90.0 °C

Revision History
Document Created: Wednesday, December 21, 2011
Added to Prospector: April, 2008
Last Updated: 8/6/2010

CYCOLOY* CY6414 Resin
Acrylonitrile Butadiene Styrene + PC
SABIC Innovative Plastics Europe

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] 0.079 in/min (2.0 mm/min)

[5] Yield

[6] 80*10*3 sp=62mm

[7] 80*10*3

[8] 80*10*4 mm

[9] by VDE

Revision History
Document Created: Wednesday, December 21, 2011
Added to Prospector: April, 2008
Last Updated: 8/6/2010