

SABIC Innovative Plastics Cycloy® EFX830ME PC (Asia Pacific)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Modified PC blend offering metallic look with minimal flow lines, flame retarded without using Chlorinated or Brominated additives. This data was supplied by SABIC-IP for the Asia Pacific region.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Cycloy-EFX830ME-PC-Asia-Pacific.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D 792
Density	1.19 g/cc	0.0430 lb/in ³	ISO 1183
Moisture Absorption at Equilibrium	0.10 %	0.10 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.25 % @Temperature 23.0 °C	0.25 % @Temperature 73.4 °F	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0060 cm/cm @Thickness 3.20 mm	0.0040 - 0.0060 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0040 - 0.0060 cm/cm @Thickness 3.20 mm	0.0040 - 0.0060 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	7.0 g/10 min @Load 2.16 kg, Temperature 260 °C	7.0 g/10 min @Load 4.76 lb, Temperature 500 °F	[cm ³ /10 min] Melt Volume Rate; ISO 1133
	8.0 g/10 min @Load 2.16 kg, Temperature 260 °C	8.0 g/10 min @Load 4.76 lb, Temperature 500 °F	ASTM D 1238
	15 g/10 min @Load 1.20 kg, Temperature 300 °C	15 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D 1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	93	93	ISO 2039-2
Tensile Strength at Break	60.0 MPa	8700 psi	Type I, 50 mm/min; ASTM D 638
	60.0 MPa	8700 psi	50 mm/min; ISO 527
Tensile Strength, Yield	62.0 MPa	8990 psi	Type I, 50 mm/min; ASTM D 638
	62.0 MPa	8990 psi	50 mm/min; ISO 527

Mechanical Properties	Metric	English	Comments
Elongation at Break	5.0 %	5.0 %	Type I, 50 mm/min; ASTM D 638
	5.0 %	5.0 %	50 mm/min; ISO 527
Elongation at Yield	4.0 %	4.0 %	Type I, 50 mm/min; ASTM D 638
	4.0 %	4.0 %	50 mm/min; ISO 527
Tensile Modulus	2.70 GPa	392 ksi	5 mm/min; ASTM D 638
	2.70 GPa	392 ksi	1 mm/min; ISO 527
Flexural Yield Strength	97.0 MPa	14100 psi	2 mm/min; ISO 178
	>= 100 MPa	>= 14500 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	2.30 GPa	334 ksi	1.3 mm/min, 50 mm span; ASTM D 790
	2.40 GPa	348 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.550 J/cm	1.03 ft-lb/in	ASTM D 256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.650 J/cm	1.22 ft-lb/in	ASTM D 256
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched	5.00 J/cm	9.37 ft-lb/in	ASTM D 4812
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	5.00 kJ/m ²	2.38 ft-lb/in ²	80*10*4; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	6.00 kJ/m ²	2.86 ft-lb/in ²	80*10*4; ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	31.0 kJ/m ²	14.8 ft-lb/in ²	80*10*4; ISO 180/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	4.40 J/cm ²	20.9 ft-lb/in ²	ISO 179/2C
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.600 J/cm ²	2.86 ft-lb/in ²	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.700 J/cm ²	3.33 ft-lb/in ²	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	16.0 J	11.8 ft-lb	Instrumented Impact Total Energy;

Impact Test Mechanical Properties	Metric @ Temperature 23.0 °C	English @ Temperature 73.4 °F	ASTM D 3763 Comments
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	70.0 µm/m-°C @Temperature -40.0 - 40.0 °C	38.9 µin/in-°F @Temperature -40.0 - 104 °F	ISO 11359-2
	70.0 µm/m-°C @Temperature -40.0 - 40.0 °C	38.9 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
CTE, linear, Transverse to Flow	70.0 µm/m-°C @Temperature -40.0 - 40.0 °C	38.9 µin/in-°F @Temperature -40.0 - 104 °F	ISO 11359-2
	70.0 µm/m-°C @Temperature -40.0 - 40.0 °C	38.9 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ft ² -°F	ASTM E 1530
Deflection Temperature at 1.8 MPa (264 psi)	86.0 °C	187 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	87.0 °C @Thickness 3.20 mm	189 °F @Thickness 0.126 in	unannealed; ASTM D 648
Vicat Softening Point	103 °C	217 °F	Rate B/50; ASTM D 1525
	103 °C	217 °F	Rate B/50; ISO 306
	105 °C	221 °F	Rate B/120; ISO 306
	111 °C	232 °F	Rate A/50; ISO 306
	111 °C	232 °F	Rate A/50; ASTM D 1525
Flammability, UL94	V-1 @Thickness 1.20 mm	V-1 @Thickness 0.0472 in	UL 94
	V-0 @Thickness 1.50 mm	V-0 @Thickness 0.0591 in	UL 94
	5VB @Thickness 2.00 mm	5VB @Thickness 0.0787 in	UL 94
	5VA @Thickness 3.50 mm	5VA @Thickness 0.138 in	UL 94

Thermal Properties	800 °C Metric	1470 °F English	Comments Glow Wire Ignitability Temperature; IEC 60695-2-13
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	960 °C	1760 °F	Glow Wire Flammability Index; IEC 60695-2-12
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	ASTM D 257
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ASTM D 257
Dielectric Constant	2.9	2.9	ASTM D 150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	2.9	2.9	ASTM D 150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	23.0 kV/mm	584 kV/in	in oil; ASTM D 149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0040	0.0040	ASTM D 150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dissipation Factor	0.020	0.020	ASTM D 150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	

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

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