

SABIC Innovative Plastics Cyclac® S157 ABS (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , ABS Polymer , Acrylonitrile Butadiene Styrene (ABS), Unreinforced, Flame Retardant

Material Notes:

CYCOLAC S157 is a high flow flame retardant ABS with good processability developed for applications requiring UL94 V0 at reduced wall thickness. This data was supplied by SABIC-IP for the Europe-Africa-Middle East region.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Cyclac-S157-ABS-Europe-Africa-Middle-East.php

Physical Properties	Metric	English	Comments
Density	1.18 g/cc	0.0426 lb/in ³	ISO 1183
Moisture Absorption at Equilibrium	0.20 %	0.20 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	1.0 % @Temperature 23.0 °C	1.0 % @Temperature 73.4 °F	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0070 cm/cm	0.0040 - 0.0070 in/in	on tensile bar; SABIC Method
Melt Flow	16 g/10 min @Load 5.00 kg, Temperature 220 °C	16 g/10 min @Load 11.0 lb, Temperature 428 °F	[cm ³ /10 min] Melt Volume Rate; ISO 1133
	17 g/10 min @Load 5.00 kg, Temperature 220 °C	17 g/10 min @Load 11.0 lb, Temperature 428 °F	ISO 1133
	72 g/10 min @Load 10.0 kg, Temperature 220 °C	72 g/10 min @Load 22.0 lb, Temperature 428 °F	[cm ³ /10 min] Melt Volume Rate; ISO 1133
	78 g/10 min @Load 10.0 kg, Temperature 220 °C	78 g/10 min @Load 22.0 lb, Temperature 428 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	112	112	ISO 2039-2
Hardness, H358/30	100 MPa	14500 psi	ISO 2039-1
Tensile Strength at Break	35.0 MPa	5080 psi	5 mm/min; ISO 527
	35.0 MPa	5080 psi	50 mm/min; ISO 527
Tensile Strength, Yield	40.0 MPa	5800 psi	5 mm/min; ISO 527
	45.0 MPa	6530 psi	50 mm/min; ISO 527

Mechanical Properties	Metric	English	Comments ISO 527
	10 %	10 %	50 mm/min; ISO 527
Elongation at Yield	2.0 %	2.0 %	5 mm/min; ISO 527
	2.0 %	2.0 %	50 mm/min; ISO 527
Tensile Modulus	2.70 GPa	392 ksi	1 mm/min; ISO 527
Flexural Yield Strength	70.0 MPa	10200 psi	2 mm/min; ISO 178
Flexural Modulus	2.50 GPa	363 ksi	2 mm/min; ISO 178
Izod Impact, Notched (ISO)	4.00 kJ/m ² @Temperature -30.0 °C	1.90 ft-lb/in ² @Temperature -22.0 °F	80*10*4; ISO 180/1A
	9.00 kJ/m ² @Temperature 23.0 °C	4.28 ft-lb/in ² @Temperature 73.4 °F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	55.0 kJ/m ² @Temperature -30.0 °C	26.2 ft-lb/in ² @Temperature -22.0 °F	80*10*4; ISO 180/1U
	NB @Temperature 23.0 °C	NB @Temperature 73.4 °F	80*10*4; ISO 180/1U
Charpy Impact, Notched	0.300 J/cm ² @Temperature -30.0 °C	1.43 ft-lb/in ² @Temperature -22.0 °F	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.800 J/cm ² @Temperature 23.0 °C	3.81 ft-lb/in ² @Temperature 73.4 °F	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
Taber Abrasion, mg/1000 Cycles	145 @Load 1.00 kg	145 @Load 2.20 lb	CS-17; SABIC Method

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	80.0 µm/m-°C @Temperature 23.0 - 60.0 °C	44.4 µin/in-°F @Temperature 73.4 - 140 °F	ISO 11359-2
CTE, linear, Transverse to Flow	80.0 µm/m-°C @Temperature 23.0 - 60.0 °C	44.4 µin/in-°F @Temperature 73.4 - 140 °F	ISO 11359-2
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² -°F	ISO 8302
Hot Ball Pressure Test	<= 80.0 °C	<= 176 °F	IEC 60695-10-2

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (69 psi)	81.0 °C	178 °F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
Deflection Temperature at 1.8 MPa (264 psi)	74.0 °C	165 °F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
Vicat Softening Point	84.0 °C	183 °F	Rate B/50; ISO 306
	86.0 °C	187 °F	Rate B/120; ISO 306
UL RTI, Electrical	60.0 °C	140 °F	UL 746B
UL RTI, Mechanical with Impact	60.0 °C	140 °F	UL 746B
UL RTI, Mechanical without Impact	60.0 °C	140 °F	UL 746B
Flammability, UL94	V-0	V-0	UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	5VB	5VB	UL 94
	@Thickness 2.50 mm	@Thickness 0.0984 in	
	5VA	5VA	UL 94
	@Thickness 3.00 mm	@Thickness 0.118 in	
Oxygen Index	28 %	28 %	LOI; ISO 4589
Glow Wire Test	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	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	2.7	2.7	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	2.8	2.8	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	18.0 kV/mm	457 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
	26.0 kV/mm	660 kV/in	
	@Thickness 1.60 mm	@Thickness 0.0630 in	in oil; IEC 60243-1
	35.0 kV/mm	889 kV/in	

Electrical Properties	Metric @ Thickness 0.800 mm	English @ Thickness 0.0315 in	in oil: IEC 60243-1 Comments
Dissipation Factor	0.0050 @Frequency 50.0 - 60.0 Hz	0.0050 @Frequency 50.0 - 60.0 Hz	IEC 60250
	0.010 @Frequency 1.00e+6 Hz	0.010 @Frequency 1.00e+6 Hz	IEC 60250
Comparative Tracking Index	450 V	450 V	IEC 60112

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

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