

## SABIC Innovative Plastics Cycolac® FR15U ABS

Category : Polymer , Thermoplastic , ABS Polymer

### Material Notes:

Flame retardant ABS with excellent indoor UV properties and excellent processing. UL94 V-0/5VA rated. Elevated UL RTI rating (90-85-90) for all colors except for blue and green colors (60-60-60).

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Cycolac-FR15U-ABS.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Cycolac-FR15U-ABS.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in <sup>3</sup>	ISO 1183
Viscosity	320000 cP	320000 cP	Melt Viscosity, 200°C, 1000 sec-1; ASTM D3825
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	3.3 g/10 min @Load 3.80 kg, Temperature 230 °C	3.3 g/10 min @Load 8.38 lb, Temperature 446 °F	ASTM D1238
	7.0 g/10 min @Load 5.00 kg, Temperature 220 °C	7.0 g/10 min @Load 11.0 lb, Temperature 428 °F	ISO 1133
Melt Index of Compound	40 g/10 min @Load 10.0 kg, Temperature 220 °C	40 g/10 min @Load 22.0 lb, Temperature 428 °F	MVR [cm <sup>3</sup> /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	30.0 MPa	4350 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	37.0 MPa	5370 psi	Type I, 5 mm/min; ASTM D638
	41.0 MPa	5950 psi	50 mm/min; ISO 527
Elongation at Break	17 %	17 %	Type I, 5 mm/min; ASTM D638
	21.9 %	21.9 %	50 mm/min; ISO 527
Elongation at Yield	2.4 %	2.4 %	Type I, 5 mm/min; ASTM D638
Tensile Modulus	2.06 GPa	299 ksi	5 mm/min; ASTM D638
	2.21 GPa	321 ksi	1 mm/min; ISO 527

Mechanical Properties	Metric Pa	English	Comments ISO 178
	67.0 MPa	9720 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.26 GPa	328 ksi	2 mm/min; ISO 178
	2.34 GPa	339 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	2.13 J/cm	3.99 ft-lb/in	ASTM D256
Izod Impact, Notched (ISO)	12.0 kJ/m <sup>2</sup>	5.71 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A
Dart Drop, Total Energy	28.0 J	20.7 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	90.0 µm/m-°C	50.0 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
CTE, linear, Transverse to Flow	91.8 µm/m-°C	51.0 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
Deflection Temperature at 0.46 MPa (66 psi)	86.0 °C	187 °F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	75.0 °C	167 °F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Vicat Softening Point	92.0 °C	198 °F	Rate B/50; ISO 306
	93.0 °C	199 °F	Rate B/50; ASTM D1525
UL RTI, Electrical	90.0 °C	194 °F	UL 746B
UL RTI, Mechanical with Impact	85.0 °C	185 °F	UL 746B
UL RTI, Mechanical without Impact	90.0 °C	194 °F	UL 746B
Flammability, UL94	V-0	V-0	UL 94
	@Thickness 1.49 mm	@Thickness 0.0587 in	
	5VA	5VA	UL 94
	@Thickness 2.79 mm	@Thickness 0.110 in	

Electrical Properties	Metric	English	Comments
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Electrical Properties	Metric	English	Comments
Dielectric Strength	20.0 kV/mm @Thickness 3.20 mm	508 kV/in @Thickness 0.126 in	in oil; IEC 60243-1
Arc Resistance	0.00 - 60 sec	0.00 - 60 sec	Tungsten; ASTM D495
Comparative Tracking Index	400 - 600 V	400 - 600 V	UL 746A
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL 746A
High Amp Arc Ignition, HAI	0.00 - 15 arcs	0.00 - 15 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	>= 150 mm/min	>= 5.91 in/min	UL 746A

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