

CYCOLAC™ FR15U resin

Acrylonitrile Butadiene Styrene

SABIC Innovative Plastics

Message:

Flame retardant ABS. Excellent indoor UV properties. Excellent moldability. UL94 V-0/5VA rated.ing.

General Information			
Additive	Flame retardancy		
Features	Good UV resistance		
	Good formability		
	Flame retardancy		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.19	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR)			
230°C/3.8 kg	3.3	g/10 min	ASTM D1238
220°C/5.0 kg	7.0	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (220°C/10.0 kg)	40.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2070	MPa	ASTM D638
--	2210	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	37.9	MPa	ASTM D638
Yield	41.1	MPa	ISO 527-2/50
Fracture ³	30.3	MPa	ASTM D638
Tensile Elongation			
Yield ⁴	2.4	%	ASTM D638
Fracture ⁵	17	%	ASTM D638
Fracture	22	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2340	MPa	ASTM D790
-- ⁷	2260	MPa	ISO 178
Flexural Stress			
--	63.3	MPa	ISO 178
Yield, 50.0mm span ⁸	67.6	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method

Notched Izod Impact			
23°C	210	J/m	ASTM D256
23°C ⁹	12	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)			
	28.5	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, unannealed, 3.20mm	86.1	°C	ASTM D648
1.8 MPa, unannealed, 3.20mm	75.0	°C	ASTM D648
Vicat Softening Temperature			
--	93.9	°C	ASTM D1525 ¹⁰
--	92.0	°C	ISO 306/B50
Linear thermal expansion coefficient			ASTM E831
Flow: -40 to 40°C	9.0E-5	cm/cm/°C	ASTM E831
Lateral: -40 to 40°C	9.2E-5	cm/cm/°C	ASTM E831
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
Volume Resistivity	> 1.0E+14	ohms · cm	IEC 60093
Dielectric Strength (3.20 mm, in Oil)	20	kV/mm	IEC 60243-1
Arc Resistance ¹¹	PLC 7		ASTM D495
Comparative Tracking Index (CTI)	PLC 1		UL 746
High Amp Arc Ignition (HAI)	PLC 4		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 4		UL 746
Hot-wire Ignition (HWI)	PLC 2		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	V-0		UL 94
2.79 mm	5VA		UL 94
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (200°C, 1000 sec ⁻¹)	320	Pa · s	ASTM D3835
Injection	Nominal Value	Unit	
Drying Temperature	82.2 - 87.8	°C	
Drying Time	2.0 - 4.0	hr	
Drying Time, Maximum	8.0	hr	
Suggested Max Moisture	0.10	%	
Suggested Shot Size	50 - 70	%	
Rear Temperature	171 - 182	°C	
Middle Temperature	199 - 210	°C	
Front Temperature	204 - 221	°C	
Nozzle Temperature	204 - 232	°C	

Processing (Melt) Temp	204 - 232	°C
Mold Temperature	48.9 - 71.1	°C
Back Pressure	0.345 - 0.689	MPa
Screw Speed	30 - 60	rpm
Vent Depth	0.038 - 0.051	mm

NOTE

1.	5.0 mm/min
2.	Type 1, 5.0 mm/min
3.	Type 1, 5.0 mm/min
4.	Type 1, 5.0 mm/min
5.	Type 1, 5.0 mm/min
6.	1.3 mm/min
7.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*4
10.	标准 B (120°C/h), 载荷2 (50N)
11.	Tungsten electrode

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