+135-3858-6433 (GuangDong)
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SABIC Innovative Plastics™

CYCOLAC* FR15U Resin

General Information

Product Description

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).

General

Additive	• Flame Retardant		
Features	• Flame Retardant	• Good Processability	• Good UV Resistance
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.19	g/cm³	ASTM D792
Density	1.19	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	3.3	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (220°C/5.0 kg)	7.0	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (220°C/10.0 kg)	40.0	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [2]	2070	MPa	ASTM D638
Tensile Modulus	2210	MPa	ISO 527-2/1
Tensile Strength [3] (Yield)	37.9	MPa	ASTM D638
Tensile Stress (Yield)	41.1	MPa	ISO 527-2/50
Tensile Strength [3] (Break)	30.3	MPa	ASTM D638
Tensile Elongation [3] (Yield)	2.4	%	ASTM D638
Tensile Elongation [3] (Break)	17	%	ASTM D638
Tensile Strain (Break)	22	%	ISO 527-2/50
Flexural Modulus [4] (50.0 mm Span)	2340	MPa	ASTM D790
Flexural Modulus [5]	2260	MPa	ISO 178
Flexural Strength [5, 6]	63.3	MPa	ISO 178

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SABIC Innovative Plastics - Acrylonitrile Butadiene Styrene

Mechanical	Nominal Value	Unit	Test Method
Flexural Strength [4] (Yield, 50.0 mm Span)	67.6	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (23°C)	210	J/m	ASTM D256
Notched Izod Impact Strength [7] (23°C)	12	kJ/m²	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, 3.20 mm	86.1	°C	
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed, 3.20 mm	75.0	°C	
Vicat Softening Temperature	93.9	°C	ASTM D1525 [8]
Vicat Softening Temperature	92.0	°C	ISO 306/B50
CLTE - Flow (-40 to 40°C)	0.000090	cm/cm/°C	ASTM E831
CLTE - Transverse (-40 to 40°C)	0.000092	cm/cm/°C	ASTM E831
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity	> 1.0E+14	ohm·cm	IEC 60093
Arc Resistance (PLC) [9]	PLC 7		ASTM D495
Electric Strength (3.20 mm, in Oil)	20	kV/mm	IEC 60243-1
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating - UL			UL 94
1.50 mm	V-0		
2.79 mm	5VA		
UL	**Nominal Value**	**Unit**	**Test Method**
RTI Str	90.0	°C	UL 746
RTI Imp	85.0	°C	UL 746
RTI Elec	90.0	°C	UL 746
Comparative Tracking Index (CTI) (PLC)	PLC 1		UL 746
High Voltage Arc Tracking Rate (HVTR) (PLC)	PLC 4		UL 746
Hot-wire Ignition (HWI) (PLC)	PLC 2		UL 746
High Amp Arc Ignition (HAI) (PLC)	PLC 4		UL 746
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity (200°C, 1000 sec^-1)	320	Pa·s	ASTM D3835

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	82.2 to 87.8	°C
Drying Time	2.0 to 4.0	hr
Drying Time, Maximum	8.0	hr
Suggested Max Moisture	0.010	%
Suggested Shot Size	50 to 70	%
Rear Temperature	171 to 182	°C
Middle Temperature	199 to 210	°C

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Injection	Nominal Value	Unit
Front Temperature	204 to 221	°C
Nozzle Temperature	204 to 232	°C
Processing (Melt) Temp	204 to 232	°C
Mold Temperature	48.9 to 71.1	°C
Back Pressure	0.345 to 0.689	MPa
Screw Speed	30 to 60	rpm
Vent Depth	0.038 to 0.051	mm