

CYCOLAC™ X11 resin

Acrylonitrile Butadiene Styrene

SABIC Innovative Plastics

Message:

Automotive: High heat resistance. Excellent flow/impact balance. UL94 HB rated. High gloss. NH designation indicates typically improved flow over legacy X11.

General Information			
Features	Highlight		
	Heat resistance, high		
Uses	Application in Automobile Field		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.04	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR)			
230°C/3.8 kg	3.5	g/10 min	ASTM D1238
260°C/5.0 kg	18	g/10 min	ASTM D1238
220°C/10.0 kg	10	g/10 min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.80	%	Internal method
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	104		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2380	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	42.0	MPa	ASTM D638
Yield	46.0	MPa	ISO 527-2/50
Fracture ³	33.0	MPa	ASTM D638
Fracture	35.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	2.6	%	ASTM D638
Yield	2.6	%	ISO 527-2/50
Fracture ⁵	27	%	ASTM D638
Fracture	18	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2300	MPa	ASTM D790
-- ⁷	2170	MPa	ISO 178

Flexural Stress			
--	69.0	MPa	ISO 178
Yield, 50.0mm span ⁸	71.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	11	kJ/m ²	ISO 179/1eA
23°C	25	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
23°C	300	J/m	ASTM D256
23°C, 6.40 mm	240	J/m	ASTM D256
-40°C ¹⁰	9.0	kJ/m ²	ISO 180/1A
-30°C ¹¹	10	kJ/m ²	ISO 180/1A
23°C ¹²	25	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	99.0	°C	ASTM D648
0.45 MPa, unannealed, 64.0mm span ¹³	99.0	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	86.0	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	93.0	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹⁴	85.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	104	°C	ISO 306/B50
--	106	°C	ISO 306/B120
RTI Elec	60.0	°C	UL 746
RTI Imp	60.0	°C	UL 746
RTI	60.0	°C	UL 746
Flammability	Nominal Value	Test Method	
Flame Rating (1.50 mm)	HB	UL 94	
Injection	Nominal Value	Unit	
Drying Temperature	87.8 - 93.3	°C	
Drying Time	2.0 - 4.0	hr	
Drying Time, Maximum	8.0	hr	
Suggested Max Moisture	0.010	%	
Suggested Shot Size	50 - 70	%	
Rear Temperature	193 - 210	°C	
Middle Temperature	210 - 227	°C	
Front Temperature	232 - 254	°C	
Nozzle Temperature	232 - 274	°C	
Processing (Melt) Temp	232 - 274	°C	
Mold Temperature	48.9 - 82.2	°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 sp=62mm	
10.	80*10*4	
11.	80*10*4	
12.	80*10*4	
13.	80*10*4 mm	
14.	80*10*4 mm	

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

