

NORYL™ RN0712 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

NORYL RN0712 is an unfilled Post Consumer recycle (PCR) based injection moldable modified polyphenylene ether resin comprising at least 37% PCR styrenic series resin content. Designed for good dimensional stability and high flow, this resin also uses non-chlorinated, non-brominated FR additives with a specific density of 1.1 g/cm³. NORYL RN0712 may be an excellent material candidate for flat panel TV enclosure applications requiring good rheological properties, heat resistance, hydrolysis resistance and low density.

General Information			
Recycled Content	Yes,37%		
Features	Bromine Free		
	Chlorine Free		
	Flame Retardant		
	Good Dimensional Stability		
	High Flow		
	High Heat Resistance		
	Hydrolysis Resistant		
	Low Density		
Uses	Television Housings		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Density	1.11	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR)			ISO 1133
280°C/1.2 kg	12.0	cm³/10min	
280°C/2.16 kg	22.0	cm³/10min	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2470	MPa	ASTM D638
--	2300	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	51.0	MPa	ASTM D638
Yield	47.0	MPa	ISO 527-2/50
Break ³	50.0	MPa	ASTM D638
Break	49.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	3.5	%	ASTM D638
Yield	3.0	%	ISO 527-2/50
Break	10	%	Internal Method
Break	7.0	%	ISO 527-2/50

Flexural Modulus			
50.0 mm Span ⁵	2300	MPa	ASTM D790
-- ⁶	2250	MPa	ISO 178
Flexural Stress			
--	77.0	MPa	ISO 178
Break, 50.0 mm Span ⁷	82.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁸			ISO 179/1eA
-30°C	3.0	kJ/m ²	
23°C	5.0	kJ/m ²	
Notched Izod Impact			
23°C, 6.40 mm	49	J/m	ASTM D256
-30°C ⁹	4.0	kJ/m ²	ISO 180/1A
23°C ¹⁰	5.0	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature ¹¹			
0.45 MPa, Unannealed, 64.0 mm Span	105	°C	ISO 75-2/Bf
1.8 MPa, Unannealed, 64.0 mm Span	87.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	110	°C	ASTM D1525, ISO 306/B50 10 ¹²
--	112	°C	ISO 306/B120
CLTE			ASTM E831, ISO 11359-2
Flow : -40 to 40°C	7.2E-5	cm/cm/°C	
Transverse : -40 to 40°C	7.4E-5	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+16	ohms·cm	ASTM D257, IEC 60093
Dielectric Constant			
1 MHz	2.91		ASTM D150
1 MHz	2.90		IEC 60250
Dissipation Factor (1 MHz)	3.2E-3		ASTM D150, IEC 60250
Comparative Tracking Index (CTI)	PLC 3		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.50 mm)	V-1		UL 94
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
1.00 mm	725	°C	
2.00 mm	725	°C	
3.00 mm	725	°C	
Oxygen Index	34	%	ISO 4589-2
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (280°C, 1500 sec ⁻¹)	95.0	Pa·s	ISO 11443

Injection	Nominal Value	Unit
Drying Temperature	75.0 to 85.0	°C
Drying Time	2.0 to 4.0	hr
Drying Time, Maximum	8.0	hr
Suggested Max Moisture	0.020	%
Suggested Shot Size	50 to 70	%
Rear Temperature	210 to 230	°C
Middle Temperature	220 to 240	°C
Front Temperature	230 to 250	°C
Nozzle Temperature	220 to 240	°C
Processing (Melt) Temp	220 to 250	°C
Mold Temperature	40.0 to 80.0	°C
Back Pressure	0.300 to 0.700	MPa
Screw Speed	60	rpm
Vent Depth	0.038 to 0.051	mm

NOTE

1. 50 mm/min
2. Type I, 50 mm/min
3. Type I, 50 mm/min
4. Type I, 50 mm/min
5. 1.3 mm/min
6. 2.0 mm/min
7. 1.3 mm/min
8. 80*10*4 sp=62mm
9. 80*10*4
10. 80*10*4
11. 80*10*4 mm
12. Rate B (120°C/h), Loading 2 (50 N)

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