

NORYL™ N1150 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics Asia Pacific

Message:

NORYL N1150 is an unfilled, injection moldable modified polyphenylene ether resin. Designed for good dimensional stability and good flow, this resin also uses non-chlorinated, non-brominated FR additives to achieve a V0 UL94 rating at 0.75 mm with a specific density of 1.11 g/cm³. NORYL 1150 may be an excellent material candidate for applications requiring electrically insulating properties, low moisture absorption, low warpage, and thin wall flame resistance.

General Information			
UL YellowCard	E45329-101091262		
Features	Chlorine Free		
	Good dimensional stability		
	Low warpage		
	Low hygroscopicity		
	Insulation		
	Good liquidity		
	Bromine-free		
	Flame retardancy		
Uses	Thin wall parts		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.11	g/cm³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (280°C/5.0 kg)	15	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	15.0	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Water Absorption (Saturation, 23°C)	0.070	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2700	MPa	ASTM D638
--	2650	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	75.0	MPa	ASTM D638
Yield	72.0	MPa	ISO 527-2/50
Fracture ³	55.0	MPa	ASTM D638
Fracture	52.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	4.0	%	ASTM D638

Yield	3.5	%	ISO 527-2/50
Fracture ⁵	8.0	%	ASTM D638
Fracture	7.0	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	3050	MPa	ASTM D790
-- ⁷	2600	MPa	ISO 178
Flexural Stress			
--	105	MPa	ISO 178
Yield, 50.0mm span ⁸	117	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	6.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	65	J/m	ASTM D256
23°C	85	J/m	ASTM D256
-30°C ¹⁰	4.0	kJ/m ²	ISO 180/1A
23°C ¹¹	6.0	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	40.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, unannealed, 3.20mm	108	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹²	109	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	130	°C	ASTM D1525, ISO 306/B50 ¹³
--	132	°C	ISO 306/B120
Linear thermal expansion coefficient			ASTM E831, ISO 11359-2
Flow: -40 to 40°C	5.5E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Lateral: -40 to 40°C	5.8E-5	cm/cm/°C	ASTM E831, ISO 11359-2
RTI Elec	65.0	°C	UL 746
RTI Imp	65.0	°C	UL 746
RTI	65.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	2.0E+16	ohms	ASTM D257, IEC 60093
Volume Resistivity	5.0E+16	ohms·cm	ASTM D257, IEC 60093
Dielectric Constant (1 MHz)	2.60		ASTM D150, IEC 60250
Dissipation Factor (1 MHz)	3.0E-3		ASTM D150, IEC 60250
Comparative Tracking Index (CTI)	PLC 2		UL 746
Comparative Tracking Index	275	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.750 mm	V-0		UL 94
2.50 mm	5VA		UL 94

Oxygen Index	38	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	93.3 - 98.9	°C	
Drying Time	3.0 - 4.0	hr	
Drying Time, Maximum	8.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	30 - 70	%	
Rear Temperature	227 - 277	°C	
Middle Temperature	238 - 282	°C	
Front Temperature	249 - 288	°C	
Nozzle Temperature	260 - 288	°C	
Processing (Melt) Temp	260 - 288	°C	
Mold Temperature	71.1 - 93.3	°C	
Back Pressure	0.345 - 0.689	MPa	
Screw Speed	20 - 100	rpm	
Vent Depth	0.038 - 0.051	mm	

NOTE

1. 5.0 mm/min
2. Type 1, 50mm/min
3. Type 1, 50mm/min
4. Type 1, 50mm/min
5. Type 1, 50mm/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 mm
13. 标准 B (120°C/h), 载荷2 (50N)

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