

NORYL™ NH5020 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

NORYL NH5020 Resin is an unreinforced blend of Polyphenylene Ether(PPE) + Polystyrene resin. The material offers a good balance of heat, flow, hydrolytic stability, and non-halogenated flame retardant. The material is suitable for injection molding and is available in custom colors.

General Information			
UL YellowCard	E45329-100041205	E45329-100153208	
Features	Good liquidity		
	Heat resistance, medium		
	Hydrolysis stability		
	Halogen-free		
	Flame retardancy		
RoHS Compliance	RoHS compliance		
Appearance	Available colors		
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)	9.8	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	10.1	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.25	%	ISO 62
Equilibrium, 23°C, 50% RH	0.050	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2730	MPa	ASTM D638
--	3060	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	79.2	MPa	ASTM D638
Yield	80.1	MPa	ISO 527-2/50
Fracture ³	62.2	MPa	ASTM D638
Fracture	77.5	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	5.0	%	ASTM D638
Yield	4.8	%	ISO 527-2/50
Fracture ⁵	15	%	ASTM D638
Fracture	5.7	%	ISO 527-2/50

Flexural Modulus			
50.0mm span ⁶	3000	MPa	ASTM D790
-- ⁷	2980	MPa	ISO 178
Flexural Stress			
--	126	MPa	ISO 178
Yield, 50.0mm span ⁸	122	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	7.9	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	59	J/m	ASTM D256
23°C	91	J/m	ASTM D256
-30°C ¹⁰	6.1	kJ/m ²	ISO 180/1A
23°C ¹¹	8.1	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	19.3	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	122	°C	ASTM D648
0.45 MPa, unannealed, 6.40mm	134	°C	ASTM D648
1.8 MPa, unannealed, 3.20mm	117	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	123	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹²	119	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	138	°C	ASTM D1525, ISO 306/B50 ¹³
--	139	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			ASTM E831, ISO 11359-2
Flow: -40 to 40°C	6.1E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Lateral: -40 to 40°C	6.8E-5	cm/cm/°C	ASTM E831, ISO 11359-2
RTI Elec	110	°C	UL 746
RTI Imp	105	°C	UL 746
RTI	110	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength (3.20 mm, in Oil)	49	kV/mm	IEC 60243-1
Arc Resistance ¹⁴	PLC 6		ASTM D495
Comparative Tracking Index (CTI)	PLC 2		UL 746
Comparative Tracking Index	2.00	V	IEC 60112
High Amp Arc Ignition (HAI)	PLC 0		UL 746
High Voltage Arc Resistance to Ignition (HVAR)	PLC 4		UL 746
Hot-wire Ignition (HWI)	PLC 0		UL 746
Flammability	Nominal Value	Unit	Test Method

Flame Rating		UL 94
0.400 mm	V-2	UL 94
0.750 mm	V-0	UL 94
2.50 mm	5VA	UL 94
Injection	Nominal Value	Unit
Drying Temperature	104 - 110	°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	243 - 293	°C
Middle Temperature	254 - 299	°C
Front Temperature	266 - 304	°C
Nozzle Temperature	277 - 304	°C
Processing (Melt) Temp	277 - 304	°C
Mold Temperature	71.1 - 98.9	°C
Back Pressure	0.345 - 0.689	MPa
Screw Speed	20 - 100	rpm
Vent Depth	0.038 - 0.051	mm
NOTE		
1.	50 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)	
14.	Tungsten electrode	

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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

