NORYL™ NH6020 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics Europe

Message:

Noryl* NH6020 is an unfilled, injection moldable modified polyphenylene ether resin. Designed for high heat resistance and thin wall FR performance, this resin delivers a UL94 V0 rating at 0.8 mm and is also non-halogenated according to VDE/DIN 472 part 815. Noryl NH6020 has a HDT > of 120 deg C, pass the BPT @ 125 deg C, pass the GWIT 775 deg C @ 1, 2 and 3 mm, has the CTI value > 250 V and may be an excellent material candidate for unattended appliances components, where IEC 60335 applies.

General Information			
UL YellowCard	E45329-100104907	E45329-100158888	
Features	Heat resistance, high Halogen-free Flame retardancy		
Uses	Thin wall parts Home appliance components		
Agency Ratings	DIN VDE 0472 part 815 IEC 60335		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity	1.14	g/cm³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (280°C/5.0 kg)	14	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	11.6	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.18	%	ISO 62
Equilibrium, 23°C, 50% RH	0.060	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
-- [1]	2740	MPa	ASTM D638
--	2740	MPa	ISO 527-2/1
Tensile Strength			
Yield [2]	78.9	MPa	ASTM D638
Yield	77.4	MPa	ISO 527-2/50
Fracture [3]	67.6	MPa	ASTM D638
Fracture	56.6	MPa	ISO 527-2/50

Tensile Elongation			
Yield [4]	4.6	%	ASTM D638
Yield	4.6	%	ISO 527-2/50
Fracture [5]	6.1	%	ASTM D638
Fracture	4.2	%	ISO 527-2/50
Flexural Modulus			
50.0mm span [6]	3020	MPa	ASTM D790
-- [7]	2690	MPa	ISO 178
Flexural Stress			
--	114	MPa	ISO 178
Yield, 50.0mm span [8]	121	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength [9] (23°C)	9.8	kJ/m²	ISO 179/1eA
Notched Izod Impact			
-30°C	36	J/m	ASTM D256
23°C	49	J/m	ASTM D256
-30°C [10]	5.4	kJ/m²	ISO 180/1A
23°C [11]	8.1	kJ/m²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	18.4	J	ASTM D3763
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
1.8 MPa, unannealed, 3.20mm	125	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span [12]	125	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	150	°C	ASTM D1525 [13]
--	141	°C	ISO 306/B50
--	151	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			
Flow: -40 to 40°C	7.8E-5	cm/cm/°C	ASTM E831
Flow: -40 to 40°C	7.5E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	7.0E-6	cm/cm/°C	ASTM E831
Lateral: -40 to 40°C	7.8E-5	cm/cm/°C	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**
Volume Resistivity	2.5E+16 - 4.2E+16	ohms·cm	IEC 60093
Dielectric Strength (1.60 mm, in Oil)	27	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
50 Hz	2.70		IEC 60250

60 Hz	2.70		IEC 60250
Dissipation Factor (1 MHz)	2.9E-3		IEC 60250
Comparative Tracking Index	600	V	IEC 60112
High Amp Arc Ignition (HAI)	PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 1		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.75 mm, Testing by SABIC	V-0		UL 94
	5VB		
2.5 mm, Testing by SABIC	5VA		UL 94
Glow Wire Flammability Index (1.0 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
1.0 mm	825	°C	IEC 60695-2-13
2.0 mm	800	°C	IEC 60695-2-13
3.0 mm	800	°C	IEC 60695-2-13
Oxygen Index	37	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	110 - 120	°C	
Drying Time	2.0 - 3.0	hr	
Hopper Temperature	80 - 100	°C	
Rear Temperature	260 - 280	°C	
Middle Temperature	280 - 300	°C	
Front Temperature	300 - 320	°C	
Nozzle Temperature	280 - 300	°C	
Processing (Melt) Temp	300 - 320	°C	
Mold Temperature	100 - 130	°C	
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)		

Recommended distributors for this material

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