NORYL™ RESIN NH7010

REGION ASIA

DESCRIPTION

NORYL NH7010 resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS) and exhibits an excellent balance of non-brominated, non-chlorinated flame retardance, high heat resistance, good flow, and low specific gravity for light weight parts. This injection moldable grade carries UL94 flame ratings of 5VA at 2mm and V0 at 1.5mm along with a UL746C Outdoor Suitability rating of F1. NORYL NH7010 resin is targeted for applications such as electrical enclosures and solar/PV junction boxes.

GENERAL INFORMATION	
Features	Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Dimensional stability, Impact resistant, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Building Component
Electrical and Electronics	Energy Management, Electronic Components, Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20241016

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	68	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	49	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.2	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	41	%	ASTM D638
Tensile Modulus, 5 mm/min	2250	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	102	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2470	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	69	MPa	ISO 527
Tensile Stress, break, 50 mm/min	63	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.9	%	ISO 527
Tensile Strain, break, 50 mm/min	8.4	%	ISO 527
Tensile Modulus, 1 mm/min	2500	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	109	MPa	ISO 178
Flexural Modulus, 2 mm/min	2520	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	223	J/m	ASTM D256
Izod Impact, notched, -30°C	89	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	38	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	20	kJ/m²	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*4 -30°C	8	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	21	kJ/m²	ISO 179/1eA
THERMAL [1]			
Vicat Softening Temp, Rate B/50	160	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	139	°C	ASTM D648
CTE, -40°C to 40°C, flow	8.16E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.15E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	8.16E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.15E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	161	°C	ISO 306
Vicat Softening Temp, Rate B/120	162	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	139	°C	ISO 75/Af
PHYSICAL [1]			
Specific Gravity	1.09	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [2]	0.5 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	10.1	g/10 min	ASTM D1238
Density	1.09	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.25	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 300°C/5.0 kg	10	cm³/10 min	ISO 1133
INJECTION MOLDING [3]			
Drying Temperature	110 – 120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	300 – 325	°C	
Nozzle Temperature	300 – 325	°C	
Front - Zone 3 Temperature	290 – 325	°C	
Middle - Zone 2 Temperature	275 – 320	°C	
Rear - Zone 1 Temperature	265 – 315	°C	
Mold Temperature	80 – 110	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

MORE INFORMATION

For curve data and CAE cards, please visit and register at https://materialfinder.sabic-specialties.com

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