NORYL™ RESIN NH5110E

REGION EUROPE

DESCRIPTION

NORYL™ NH5110E resin is a non-reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This extrusion grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of V1 at 1.5mm along with a Vicat B/120 temperature of 138C according to ISO 306. NORYL NH5110E resin was developed for low-beard growth during profile extrusion and is an excellent candidate for electrical conduit and cable management applications.

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yield, 50 mm/min	64	MPa	ISO 527
Tensile Stress, break, 50 mm/min	52	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4	%	ISO 527
Tensile Strain, break, 50 mm/min	18	%	ISO 527
Tensile Modulus, 1 mm/min	2500	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	98	MPa	ISO 178
Flexural Modulus, 2 mm/min	2400	MPa	ISO 178
IMPACT			
Izod Impact, notched 80*10*4 +23°C	24	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	26	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	11	kJ/m²	ISO 179/1eA
THERMAL			
CTE, 23°C to 80°C, flow	8.2E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, xflow	9.4E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	8.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.4E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Pass	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	149	°C	ISO 306
Vicat Softening Temp, Rate B/120	138	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	129	°C	ISO 75/Be
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	114	°C	ISO 75/Af
Relative Temp Index, Elec (1)	65	°C	UL 746B
Relative Temp Index, Mech w/impact (1)	65	°C	UL 746B
Relative Temp Index, Mech w/o impact (1)	65	°C	UL 746B
PHYSICAL			
Density	1.09	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.15	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	9	cm³/10 min	ISO 1133
ELECTRICAL			
Relative Permittivity, 1 MHz	2.6	-	ASTM D 150

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Dissipation Factor, 1 MHz	0.0017	-	ASTM D 150
Dielectric Strength, shorttime, 1.0mm	46	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.6	-	IEC 60250
Dissipation Factor, 1 MHz	0.0017	-	IEC 60250
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E45329-100158340	-	-
UL Recognized, 94V-1 Flame Class Rating	1.5	mm	UL 94
Oxygen Index (LOI)	34	%	ISO 4589
PROFILE EXTRUSION			
Drying Temperature	80 – 90	°C	
Drying Time	2 – 3	hrs	
Melt Temperature	240 – 260	°C	
Barrel - Zone 1 Temperature	220 – 240	°C	
Barrel - Zone 2 Temperature	230 – 250	°C	
Barrel - Zone 3 Temperature	240 – 260	°C	
Barrel - Zone 4 Temperature	240 – 260	°C	
Hopper Temperature	40 – 60	°C	
Adapter Temperature	240 – 260	°C	
Die Temperature	240 – 260	°C	
Calibrator Temperature	50 – 70	°C	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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