

NORYL™ RESIN NH5110E

REGION EUROPE

DESCRIPTION

NORYL NH5110E resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). 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.

GENERAL INFORMATION

Features

Flame Retardant, Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Non halogenated flame retardant, Dimensional stability, No PFAS intentionally added

Fillers

Unreinforced

Polymer Types

Polyphenylene Ether + PS (PPE+PS)

Processing Techniques

Profile Extrusion

INDUSTRY

Electrical and Electronics

Industrial

SUB INDUSTRY

Electronic Components

Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
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 ⁽¹⁾			
Izod Impact, notched 80*10*4 +23°C	24	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	26	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	11	kJ/m ²	ISO 179/1eA
THERMAL ⁽¹⁾			
CTE, 23°C to 80°C, flow	8.2E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, xflow	9.4E-05	1/°C	ASTM E831
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

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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 ⁽²⁾	65	°C	UL 746B
Relative Temp Index, Mech w/impact ⁽²⁾	65	°C	UL 746B
Relative Temp Index, Mech w/o impact ⁽²⁾	65	°C	UL 746B
PHYSICAL ⁽¹⁾			
Density	1.09	g/cm ³	ISO 1183
Water Absorption, (23°C/saturated)	0.15	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	9	cm ³ /10 min	ISO 1133
ELECTRICAL ⁽¹⁾			
Relative Permittivity, 1 MHz	2.6	-	ASTM D150
Dissipation Factor, 1 MHz	0.0017	-	ASTM D150
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 ⁽²⁾			
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) 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) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses, colors and regions. For details, please see the UL Yellow Card.

ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.



DISCLAIMER

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.