NORYL™ RESIN FN170X

REGION AMERICAS

DESCRIPTION

NORYL™ FN170X resin is a foamable blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS) and offers 10% density reduction at 6.35mm (0.250") wall. This material contains non-brominated, non-chlorinated flame retardant with a UL94 flame rating of 5VA at 4.7mm and V1 at 3mm along with UL746C outdoor suitability rating of F2. NORYL FN170X resin exhibits good dimensional stability and low moisture absorption. The unique combination of properties allow for designing optimum wall thickness in computer and business machine applications, electrical enclosures/housings, medical equipment, and hospital bed rails and components.

TYPICAL PROPERTY VALUES

Revision 20190718

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
FOAM - MECHANICAL 6.4 mm Wt Reduction	10	%	-
Tensile Stress, yield, 6.35 mm	29	MPa	ASTM D 638
Tensile Stress, break, 6.35 mm	28	MPa	ASTM D 638
Tensile Strain, yield, 6.35 mm	5.7	%	ASTM D 638
Tensile Strain, break, 6.35 mm	13.1	%	ASTM D 638
Flexural Stress, yield, 6.4 mm	66	MPa	ASTM D 790
Flexural Modulus, 6.4 mm	2130	MPa	ASTM D 790
IMPACT			
FOAM - IMPACT 6.4 mm Wt Reduction	10	%	-
Izod Impact, unnotched, 23°C, 6.4mm	277	J/m	ASTM D 4812
Instrumented Impact Energy @ peak, 23°C	57	J	ASTM D 3763
THERMAL			
FOAM - THERMAL 6.4mm Wt Reduction	10	%	-
HDT, 0.45 MPa, 6.4 mm, unannealed	89	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	78	°C	ASTM D 648
Relative Temp Index, Elec [1]	85	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	85	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	85	°C	UL 746B
PHYSICAL			
FOAM - PHYSICAL 6.4mm Wt Reduction	10	%	-
Specific Gravity	1.11	-	ASTM D 792
Specific Gravity, foam molded	1	-	ASTM D 792
Water Absorption, 24 hours	0.06	%	ASTM D 570
Mold Shrinkage, flow, 6.4 mm	0.6 – 0.8	%	SABIC method
ELECTRICAL			
Comparative Tracking Index (UL) {PLC}	1	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥6	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥6	mm	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
FLAME CHARACTERISTICS [1]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Yellow Card Link	E121562-221159	-	-
FOAM - Flame Class Minimum Density	1	g/cm³	-
UL Recognized, 94V-1 Flame Class Rating	≥3	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	≥4.7	mm	UL 94
Radiant Panel Listing	☑	-	UL Tested
UV-light, water exposure/immersion	F2	-	UL 746C
STRUCTURAL FOAM MOLDING			
Blowing Agent, Physical System	Nitrogen Gas	-	
Concentration Range (Blowing Agent)	1 – 3	%	
Recommended Concentration (Blowing Agent)	2	%	
Drying Temperature (Resin)	70 – 80	°C	
Drying Time (Resin)	2 – 4	hrs	
Drying Time (Resin, Cumulative)	8	hrs	
Melt Temperature	270 – 310	°C	
Nozzle Temperature	270 – 305	°C	
Front Temperature	270 – 305	°C	
Middle Temperature	270 – 305	°C	
Rear Temperature	230 – 260	°C	
Mold Temperature	25 – 55	°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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