NORYL™ RESIN FNH2160

REGION AMERICAS

DESCRIPTION

NORYL™ FNH2160 resin is a foamable blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS) and offers 20% weight reduction at 6.35mm (0.250") wall. This material contains non-brominated, non-chlorinated flame retardant with a UL94 flame rating of 5VA at 3.9 mm and V1 at 3mm. NORYL FNH2160 resin offers fast cycle time, improved processing, and exhibits good dimensional stability and low moisture absorption. The unique combination of properties in this structural foam material allows 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			
Tensile Modulus, 50 mm/min	2680	MPa	ASTM D 638
Tensile Stress, yield, 50 mm/min	55	MPa	ASTM D 638
Tensile Strain, yield, 50 mm/min	3.04	%	ASTM D 638
Tensile Stress, yield, 6.35 mm	36	MPa	ASTM D 638
FOAM - MECHANICAL 6.4 mm Wt Reduction	20	%	-
Tensile Stress, break, 6.35 mm	34	MPa	ASTM D 638
Tensile Strain, break, 6.35 mm	12	%	ASTM D 638
Flexural Stress, yield, 6.4 mm	70	MPa	ASTM D 790
Flexural Modulus, 6.4 mm	2250	MPa	ASTM D 790
IMPACT			
FOAM - IMPACT 6.4 mm Wt Reduction	20	%	-
Izod Impact, unnotched, 23°C, 6.4mm	362	J/m	ASTM D 4812
Instrumented Impact Energy @ peak, 23°C	29	J	ASTM D 3763
THERMAL			
FOAM - THERMAL 6.4mm Wt Reduction	20	%	-
HDT, 0.45 MPa, 6.4 mm, unannealed	93	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	82	°C	ASTM D 648
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			
FOAM - PHYSICAL 6.4mm Wt Reduction	20	%	-
Specific Gravity	1.12	-	ASTM D 792
Specific Gravity, foam molded	0.88	-	ASTM D 792
Water Absorption, 24 hours	0.07	%	ASTM D 570
Mold Shrinkage, flow, 6.4 mm	0.5 – 0.8	%	SABIC method
Melt Volume Rate, MVR at 280°C/5.0 kg	36	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E121562-101920328	-	-
FOAM - Flame Class Minimum Density	0.85	g/cm³	-
UL Recognized, 94-5VA Flame Class Rating	≥3.9	mm	UL 94

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Recognized, 94V-0 Flame Class Rating	≥6	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥3	mm	UL 94
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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