NORYL™ Resin FN215X
Americas: COMMERCIAL

Structural foam resin. 170F (77C) HDT. Improved reliability and productivity. All values at 20% weight reduction.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
FOAM - MECHANICAL 6.4 mm Wt Reduction	20	%	-
Tensile Stress, yield, 6.35 mm	290	kgf/cm²	ASTM D 638
Tensile Strain, break, 6.35 mm	12	%	ASTM D 638
Flexural Stress, yield, 6.4 mm	620	kgf/cm²	ASTM D 790
Flexural Modulus, 6.4 mm	19400	kgf/cm²	ASTM D 790
IMPACT			
FOAM - IMPACT 6.4 mm Wt Reduction	20	%	-
Izod Impact, unnotched, 23°C, 6.4mm	20	cm-kgf/cm	ASTM D 4812
Instrumented Impact Energy @ peak, 23°C	111	cm-kgf	ASTM D 3763
Instrumented Impact Energy @ peak, -30	33	cm-kgf	ASTM D 3763
THERMAL			
FOAM - THERMAL 6.4mm Wt Reduction	20	%	-
HDT, 0.45 MPa, 6.4 mm, unannealed	88	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	76	°C	ASTM D 648
Relative Temp Index, Elec	85	°C	UL 746B
Relative Temp Index, Mech w/impact	85	°C	UL 746B
Relative Temp Index, Mech w/o impact	85	°C	UL 746B
PHYSICAL			
FOAM - PHYSICAL 6.4mm Wt Reduction	20	%	-
Specific Gravity	1.1	-	ASTM D 792
Specific Gravity, foam molded	0.88	-	ASTM D 792
Water Absorption, 24 hours	0.07	%	ASTM D 570
Water Absorption, equilibrium, 23C	0.17	%	ASTM D 570
Mold Shrinkage, flow, 6.4 mm (5)	0.6 - 0.8	%	SABIC Method

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TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
ELECTRICAL			
Surface Resistivity	>1.E+17	Ohm	ASTM D 257
Dielectric Strength, in oil, 1.6 mm	12	kV/mm	ASTM D 149
Relative Permittivity, 1 MHz	2.2	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0044	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	1	PLC Code	UL 746A
FLAME CHARACTERISTICS			
FOAM - Flame Class Minimum Density	0.85	g/cm³	-
UL Recognized, 94V-1 Flame Class Rating (3)	2.99	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	5.99	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3.91	mm	UL 94
Radiant Panel Listing	YES	-	UL Tested
UV-light, water exposure/immersion	F1	-	UL 746C

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
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

• Drying is not required/recommended.