NORYL™ RESIN PX1860

REGION EUROPE

DESCRIPTION

NORYL PX1860 is an unfilled, injection moldable modified polyphenylene ether resin. Designed for good dimensional stability and high flow , this resin also uses non-chlorinated, non-brominated FR additives to achieve a V1 UL94 rating at 1.5 mm with a specific density of 1.1 g/cm^3. NORYL PX1860 may be an excellent material candidate for Flat Panel TV enclosure applications requiring good rheological properties, heat resistance, hydrolysis resistance, low density and thin wall flame resistance.

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	52	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	49	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	3.6	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	7.3	%	ASTM D 638
Tensile Modulus, 50 mm/min	3140	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	98	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2770	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	61	MPa	ISO 527
Tensile Stress, break, 50 mm/min	53	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3.5	%	ISO 527
Tensile Strain, break, 50 mm/min	8	%	ISO 527
Tensile Modulus, 1 mm/min	2510	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	89	MPa	ISO 178
Flexural Modulus, 2 mm/min	2420	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	38	J/m	ASTM D 256
Izod Impact, notched, -30°C	27	J/m	ASTM D 256
Izod Impact, notched 80*10*4 +23°C	6	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	4	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	6	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	110	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	90	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.4E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.4E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	7.4E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.4E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	111	°C	ISO 306
Vicat Softening Temp, Rate B/120	114	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	92	°C	ISO 75/Af
Relative Temp Index, Elec [1]	65	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	65	°C	UL 746B

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Temp Index, Mech w/o impact [1]	65	°C	UL 746B
PHYSICAL			
Specific Gravity	1.1	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Density	1.1	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.13	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.02	%	ISO 62
Melt Volume Rate, MVR at 280°C/1.2 kg	15	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 280°C/2.16 kg	34	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	4.E+16	Ohm-cm	ASTM D 257
Surface Resistivity	1.E+14	Ohm	ASTM D 257
Relative Permittivity, 1 MHz	2.7	-	ASTM D 150
Dissipation Factor, 1 MHz	0.02	-	ASTM D 150
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
Volume Resistivity	4.E+16	Ohm-cm	IEC 60093
Surface Resistivity, ROA	1.E+14	Ohm	IEC 60093
Dielectric Strength, in oil, 1.6 mm	28.6	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 1 MHz	0.02	-	IEC 60250
Comparative Tracking Index [2]	250	V	IEC 60112
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E45329-100037005	-	-
UL Recognized, 94V-1 Flame Class Rating	≥1.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at [2]	3	mm	IEC 60695-2-12
Oxygen Index (LOI)	30	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	70 – 80	°C	
Drying Time	2 – 3	hrs	
Melt Temperature	260 – 295	°C	
Nozzle Temperature	250 – 280	°C	
Front - Zone 3 Temperature	260 – 295	°C	
Middle - Zone 2 Temperature	240 – 270	°C	
Rear - Zone 1 Temperature	210 – 230	°C	
Hopper Temperature	65 – 85	°C	
Mold Temperature	45 – 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.

(2) Value shown here is based on internal measurement.

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