NORYL™ RESIN FP5140

REGION AMERICAS

DESCRIPTION

NORYLFP5140 is an unfilled, injection moldable modified polyphenylene ether resin with an ISO306 Vicat B/120 of 100 deg C. 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 1.5mm with a specific density of 1.1g/cm3. NORYL FP5140 may be an excellent material for Flat Panel TV enclosure applications requiring good rheological properties, heat resistance, hydrolysis resistance, low density and thin all flame resistance

TYPICAL PROPERTY VALUES

Revision 20181012

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Modulus, 50 mm/min	2940	MPa	ASTM D 638
Tensile Stress, yield, 50 mm/min	58	MPa	ISO 527
Tensile Stress, break, 50 mm/min	48	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3.5	%	ISO 527
Tensile Strain, break, 50 mm/min	7	%	ISO 527
Tensile Modulus, 1 mm/min	2450	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	87	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
IMPACT			
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	5	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	103	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	81	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.3E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.7E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	8.3E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.7E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	105	°C	ISO 306
Vicat Softening Temp, Rate B/120	110	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	85	°C	ISO 75/Af
Relative Temp Index, Elec	65	°C	UL 746B
Relative Temp Index, Mech w/impact	65	°C	UL 746B
Relative Temp Index, Mech w/o impact	65	°C	UL 746B
PHYSICAL			
Specific Gravity	1.11	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Density	1.11	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.18	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 280°C/1.2 kg	15	cm³/10 min	ISO 1133

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Volume Rate, MVR at 280°C/2.16 kg	44	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	30000000000000000 – 35000000000000000	Ohm-cm	ASTM D 257
Surface Resistivity	8.E+13 – 8.5E+13	Ohm	ASTM D 257
Relative Permittivity, 1 MHz	3	-	ASTM D 150
Dissipation Factor, 1 MHz	0.002	-	ASTM D 150
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
Volume Resistivity	30000000000000000 – 35000000000000000	Ohm-cm	IEC 60093
Surface Resistivity, ROA	8.E+16 – 8.5E+16	Ohm	IEC 60093
Dielectric Strength, in oil, 1.6 mm	27.5	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.8	-	IEC 60250
Dissipation Factor, 1 MHz	0.002	-	IEC 60250
Comparative Tracking Index	250	V	IEC 60112
FLAME CHARACTERISTICS			
UL Compliant, 94V-1 Flame Class Rating	1.5	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 960°C, passes at	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	700	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	725	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	725	°C	IEC 60695-2-13
Oxygen Index (LOI)	30	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	70 – 80	°C	
Drying Time	2 – 3	hrs	
Melt Temperature	250 – 285	°C	
Nozzle Temperature	240 – 270	°C	
Front - Zone 3 Temperature	250 – 285	°C	
Middle - Zone 2 Temperature	230 – 260	°C	
Rear - Zone 1 Temperature	200 – 220	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	40 – 65	°C	

DISCLAIMER