

# NORYL<sup>TM</sup> RESIN FP5 140HF

REGION AMERICAS

## DESCRIPTION

NORYLFP5140HF 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 1.11g/cm<sup>3</sup>. 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 wall flame resistance

## TYPICAL PROPERTY VALUES

Revision 20181012

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Modulus, 50 mm/min	2940	MPa	ASTM D 638
Tensile Stress, yield, 50 mm/min	48	MPa	ISO 527
Tensile Stress, break, 50 mm/min	44	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	2.7	%	ISO 527
Tensile Strain, break, 50 mm/min	21.4	%	ISO 527
Tensile Modulus, 1 mm/min	2530	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	80	MPa	ISO 178
Flexural Modulus, 2 mm/min	2450	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched 80*10*4 +23°C	6	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	97	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	78	°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	97	°C	ISO 306
Vicat Softening Temp, Rate B/120	100	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	80	°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
<b>PHYSICAL</b>			
Specific Gravity	1.11	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Density	1.11	g/cm <sup>3</sup>	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	17	cm <sup>3</sup> /10 min	ISO 1133

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Volume Rate, MVR at 280°C/2.16 kg	48	cm <sup>3</sup> /10 min	ISO 1133
<b>FLAME CHARACTERISTICS</b>			
UL Compliant, 94V-1 Flame Class Rating	1.5	mm	UL 94 by SABIC-IP
<b>INJECTION MOLDING</b>			
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	

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