NORYL™ RESIN HF185

REGION EUROPE

DESCRIPTION

NORYL™ HF185 resin is a non- reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This easy flow, injection moldable grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of 5VA at 2.5mm, V0 at 2mm, and V1 at 1.5mm. NORYL HF185 resin is an excellent candidate for electrical housings / enclosures and printer components.

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Taber Abrasion, CS-17, 1 kg	100	mg/1000cy	SABIC method
Tensile Stress, yield, 50 mm/min	50	MPa	ISO 527
Tensile Stress, break, 50 mm/min	40	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3	%	ISO 527
Tensile Strain, break, 50 mm/min	20	%	ISO 527
Tensile Modulus, 1 mm/min	2200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	70	MPa	ISO 178
Flexural Modulus, 2 mm/min	2200	MPa	ISO 178
Ball Indentation Hardness, H358/30	100	MPa	ISO 2039-1
IMPACT			
Izod Impact, notched 80*10*4 +23°C	8	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	9	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
THERMAL			
Thermal Conductivity	0.24	W/m·°C	ISO 8302
CTE, 23°C to 80°C, flow	9.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	110	°C	ISO 306
Vicat Softening Temp, Rate B/50	100	°C	ISO 306
Vicat Softening Temp, Rate B/120	100	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	85	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	70	°C	ISO 75/Ae
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			
Mold Shrinkage on Tensile Bar, flow	0.5 – 0.7	%	SABIC method
Density	1.13	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.37	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 280°C/2.16 kg	13	cm³/10 min	ISO 1133

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ELECTRICAL			
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+13	Ohm	IEC 60093
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.02	-	IEC 60250
Dissipation Factor, 1 MHz	0.006	-	IEC 60250
Relative Permittivity, 50/60 Hz	2.9	-	IEC 60250
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥2	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥2	mm	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
FLAME CHARACTERISTICS (1)			
UL Yellow Card Link	E45329-236758	-	-
UL Recognized, 94-5VA Flame Class Rating	≥2.5	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥2	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥1.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at (2)	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	30	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	80 – 100	°C	
Drying Time	2 – 3	hrs	
Melt Temperature	260 – 280	°C	
Nozzle Temperature	240 – 260	°C	
Front - Zone 3 Temperature	260 – 280	°C	
Middle - Zone 2 Temperature	240 – 260	°C	
Rear - Zone 1 Temperature	220 – 240	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	60 – 80	°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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