+135-3858-6433 (GuangDong)
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NORYL™ Resin FXN121BK

Americas: COMMERCIAL

NORYL FXN121BK is an unfilled modified polyphenylene ether resin suitable for injection molding. Designed to possess a unique low gloss surface appearance even when molded in polished tools, this resin uses non-chlorinated, non-brominated FR additives to achieve a V1 UL94 rating. FXN121BK is available in black only.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	650	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	540	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.8	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	30	%	ASTM D 638
Tensile Modulus, 5 mm/min	23400	kgf/cm²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	980	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	24400	kgf/cm²	ASTM D 790
Taber Abrasion, CS-17, 1 kg	60	mg/1000cy	SABIC Method
Tensile Stress, yield, 50 mm/min	63	MPa	ISO 527
Tensile Stress, break, 50 mm/min	52	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.6	%	ISO 527
Tensile Strain, break, 50 mm/min	30	%	ISO 527
Tensile Modulus, 1 mm/min	2350	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	92	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
Hardness, H358/30	105	MPa	ISO 2039-1
Hardness, Rockwell R	119	-	ISO 2039-2
IMPACT			
Izod Impact, notched, 23°C	12	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	7	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	418	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	11	kJ/m²	ISO 180/1A

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TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
IMPACT			
Izod Impact, notched 80*10*4 -30°C	7	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	14	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	139	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	133	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	119	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.2E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	8.2E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.5E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	138	°C	ISO 306
Vicat Softening Temp, Rate B/120	142	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	133	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	118	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.08	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	7	g/10 min	ASTM D 1238
Density	1.08	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.23	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	7	cm³/10 min	ISO 1133
OPTICAL			
Gloss, untextured, 60 degrees	20	-	ASTM D 523

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TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
ELECTRICAL			
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	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	-	IEC 60250
Dissipation Factor, 1 MHz	0.002	-	IEC 60250
Relative Permittivity, 50/60 Hz	2.7	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-1 Flame Class Rating (3)	1.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	700	°C	IEC 60695-2-13
Oxygen Index (LOI)	30	%	ISO 4589

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	70 - 90	°C
Drying Time	2 - 3	hrs
Melt Temperature	265 - 285	°C
Nozzle Temperature	260 - 280	°C
Front - Zone 3 Temperature	260 - 285	°C
Middle - Zone 2 Temperature	240 - 260	°C
Rear - Zone 1 Temperature	200 - 220	°C
Hopper Temperature	60 - 80	°C
Mold Temperature	40 - 70	°C