



NORYL™ Resin NH6020

Europe-Africa-Middle East: COMMERCIAL

Noryl* NH6020 is an unfilled, injection moldable modified polyphenylene ether resin. Designed for high heat resistance and thin wall FR performance, this resin delivers a UL94 V0 rating at 0.8 mm and is also non-halogenated according to VDE/DIN 472 part 815. Noryl NH6020 has a HDT > of 120 deg C, pass the BPT @ 125 deg C, pass the GWIT 775 deg C @ 1, 2 and 3 mm, has the CTI value > 250 V and may be an excellent material candidate for unattended appliances components, where IEC 60335 applies.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	800	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	680	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.6	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	6.1	%	ASTM D 638
Tensile Modulus, 5 mm/min	27900	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1230	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	30700	kgf/cm ²	ASTM D 790
Tensile Stress, yield, 50 mm/min	77	MPa	ISO 527
Tensile Stress, break, 50 mm/min	56	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.6	%	ISO 527
Tensile Strain, break, 50 mm/min	4.2	%	ISO 527
Tensile Modulus, 1 mm/min	2740	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	114	MPa	ISO 178
Flexural Modulus, 2 mm/min	2680	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	4	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	3	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	187	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	8	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	9	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	150	°C	ASTM D 1525



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THERMAL			
HDT, 1.82 MPa, 3.2mm, unannealed	125	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.75E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.E+00	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	7.5E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.75E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	125	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	141	°C	ISO 306
Vicat Softening Temp, Rate B/120	151	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	124	°C	ISO 75/Af
Relative Temp Index, Elec	110	°C	UL 746B
Relative Temp Index, Mech w/impact	105	°C	UL 746B
Relative Temp Index, Mech w/o impact	110	°C	UL 746B
PHYSICAL			
Specific Gravity	1.14	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	13.5	g/10 min	ASTM D 1238
Density	1.14	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.18	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	11	cm ³ /10 min	ISO 1133
ELECTRICAL			
Hot Wire Ignition {PLC}	1	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	2	PLC Code	UL 746A
Volume Resistivity	2.5E+16 - 4.15E+16	Ohm-cm	IEC 60093
Dielectric Strength, in oil, 1.6 mm	27	kV/mm	IEC 60243-1



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ELECTRICAL			
Dissipation Factor, 1 MHz	0.002	-	IEC 60250
Comparative Tracking Index	600	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.7	-	IEC 60250
FLAME CHARACTERISTICS			
UL Compliant, 94V-0 Flame Class Rating (3)(4)	0.75	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VA Rating (3)(4)	2.5	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VB Rating (3)(4)	2.5	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13
Oxygen Index (LOI)	37	%	ISO 4589



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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	110 - 120	°C
Drying Time	2 - 3	hrs
Melt Temperature	300 - 320	°C
Nozzle Temperature	280 - 300	°C
Front - Zone 3 Temperature	300 - 320	°C
Middle - Zone 2 Temperature	280 - 300	°C
Rear - Zone 1 Temperature	260 - 280	°C
Hopper Temperature	80 - 100	°C
Mold Temperature	100 - 130	°C