SABIC Innovative Plastics™

Noryl* Resin NH7111E

Americas: COMMERCIAL

Noryl* EXNL0280 is a glass fiber reinforced, injection moldable modified polyphenylene ether resin. Designed for good dimensional stability and low warpage, this resin also uses non-halogenated FR additives to achieve a V1 UL94 rating at 1.6 mm and V0 UL94 at 3.00mm with a CTI value of 400 V. Noryl EXNL0280 may be an excellent material candidate for application requiring electrically insulating properties, low moisture absorption, low warpage and thin wall flame resistance. Available in limited light grey colors

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 5 mm/min	69	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	66	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	3.2	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	4.5	%	ASTM D 638
Tensile Modulus, 5 mm/min	3600	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	120	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	3570	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	76	MPa	ISO 527
Tensile Stress, break, 5 mm/min	75	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3.4	%	ISO 527
Tensile Strain, break, 5 mm/min	3.6	%	ISO 527
Tensile Modulus, 1 mm/min	3790	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	127	MPa	ISO 178
Flexural Modulus, 2 mm/min	3620	MPa	ISO 178
IMPACT	Value	Unit	Standard
Izod Impact, notched, 23°C	45	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	10	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	7	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	26	kJ/m²	ISO 179/1eA
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	149	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	140	°C	ASTM D 648
CTE, -40°C to 40°C, flow	4.35E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.09E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	4.35E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.09E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/120	155	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	140	°C	ISO 75/Af
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.24	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 300°C/5.0 kgf	18	g/10 min	ASTM D 1238
Density	1.24	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.23	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.07	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	15	cm³/10 min	ISO 1133

ELECTRICAL	Value	Unit	Standard
Hot Wire Ignition {PLC)	0	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Volume Resistivity	1.4E+01 - 1.6E+01	Ohm-cm	IEC 60093
Surface Resistivity, ROA	3.E+13 - 5.E+13	Ohm	IEC 60093
Dielectric Strength, in oil, 3.2 mm	27.3	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Comparative Tracking Index	400	V	IEC 60112
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Compliant, 94V-1 Flame Class Rating (3)(4)	1	mm	UL 94 by GE
UL Compliant, 94V-0 Flame Class Rating (3)(4)	3	mm	UL 94 by GE
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.5 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	775	°C	IEC 60695-2-13

Source GMD, last updated:08/19/2008

Processing

Parameter Injection Molding	Value	Unit
Drying Temperature	100 - 120	°C
Drying Time	2 - 3	hrs
Melt Temperature	280 - 300	°C
Nozzle Temperature	260 - 280	°C
Front - Zone 3 Temperature	280 - 300	°C
Middle - Zone 2 Temperature	260 - 280	°C
Rear - Zone 1 Temperature	240 - 260	°C
Hopper Temperature	60 - 80	°C
Mold Temperature	80 - 120	°C

Source GMD, last updated:08/19/2008

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.
(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
(4) Internal measurements according to UL standards.

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