

Noryl* Resin N190HX

Americas: COMMERCIAL

High gloss. 182F (83C) HDT. UL94 V-0/5VA rated.

Property

TYPICAL PROPERTIES ⁽¹⁾			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 50 mm/min	62	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	49	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	3.8	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	14	%	ASTM D 638
Tensile Modulus, 50 mm/min	2460	MPa	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	89	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	2270	MPa	ASTM D 790
Hardness, Rockwell R	117	-	ASTM D 785
Taber Abrasion, CS-17, 1 kg	82	mg/1000cy	ASTM D 1044
IMPACT	Value	Unit	Standard
Izod Impact, unnotched, 23°C	1869	J/m	ASTM D 4812
Izod Impact, notched, 23°C	192	J/m	ASTM D 256
Izod Impact, notched, -30°C	80	J/m	ASTM D 256
Instrumented Impact Energy @ peak, 23°C	37	J	ASTM D 3763
Instrumented Impact Energy @ peak, -30	11	J	ASTM D 3763
THERMAL	Value	Unit	Standard
HDT, 0.45 MPa, 6.4 mm, unannealed	95	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	83	°C	ASTM D 648
CTE, -40°C to 95°C, flow	9.E-05	1/°C	ASTM E 831
CTE, -40°C to 95°C, xflow	9.18E-05	1/°C	ASTM E 831
Thermal Conductivity	0.25	W/m-°C	ASTM C 177
Relative Temp Index, Elec	95	°C	UL 746B
Relative Temp Index, Mech w/impact	80	°C	UL 746B
Relative Temp Index, Mech w/o impact	95	°C	UL 746B
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.1	-	ASTM D 792
Water Absorption, 24 hours	0.066	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.5 - 0.7	%	SABIC Method
ELECTRICAL	Value	Unit	Standard
Volume Resistivity	8.E+16	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+11	Ohm	ASTM D 257
Dielectric Strength, in oil, 1.6 mm	28.1	kV/mm	ASTM D 149
Relative Permittivity, 100 kHz	2.6	-	ASTM D 150
Dissipation Factor, 100 Hz	0.011	-	ASTM D 150
Dissipation Factor, 100 kHz	0.0057	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	2	PLC Code	UL 746A

Comparative Tracking Index (UL) {PLC}	1	PLC Code	UL 746A
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Recognized, 94HB Flame Class Rating (3)	1.01	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	1.47	mm	UL 94
UL Recognized, 94-5VA Rating (3)	2.99	mm	UL 94
CSA (See File for complete listing)	LS88480	File No.	CSA LISTED
Oxygen Index (LOI)	35.7	%	ASTM D 2863
Radiant Panel Listing	YES	-	UL Tested
UV-light, water exposure/immersion	F1	-	UL 746C

Source GMD, last updated:01/05/2000

Processing

Parameter	Value	Unit
Injection Molding		
Drying Temperature	75 - 80	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	250 - 275	°C
Nozzle Temperature	250 - 275	°C
Front - Zone 3 Temperature	240 - 275	°C
Middle - Zone 2 Temperature	225 - 270	°C
Rear - Zone 1 Temperature	215 - 265	°C
Mold Temperature	55 - 75	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	20 - 100	rpm
Shot to Cylinder Size	30 - 70	%
Vent Depth	0.038 - 0.051	mm

Source GMD, last updated:01/05/2000

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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