

Noryl* Resin N300X

Americas: COMMERCIAL

PPE+PS blend. Unfilled. Non-brominated, non-chlorinated FR system. UL94 V0. High heat. Dielectric strength. Dimensional stability. Suitable for E/E applications.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	750	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	740	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5.3	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	7.6	%	ASTM D 638
Tensile Modulus, 5 mm/min	24200	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1120	kgf/cm ²	ASTM D 790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	1120	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	27000	kgf/cm ²	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	25500	kgf/cm ²	ASTM D 790
Hardness, Rockwell R	119	-	ASTM D 785
Tensile Stress, yield	75	MPa	ISO 527
Tensile Stress, break	66	MPa	ISO 527
Tensile Strain, yield	5.2	%	ISO 527
Tensile Strain, break	13	%	ISO 527
Tensile Modulus, 1 mm/min	2220	MPa	ISO 527
Flexural Stress	112	MPa	ISO 178
Flexural Modulus	2520	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	19	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	5	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	550	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	15	kJ/m ²	ISO 180/1A

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. 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) Own measurement according to UL.

Source, GMD, Last Update: 02/01/2005

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	155	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	140	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	145	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ASTM E 831
Vicat Softening Temp, Rate B/50	162	°C	ISO 306
Vicat Softening Temp, Rate B/120	164	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	156	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	140	°C	ISO 75/Ae
Relative Temp Index, Elec	105	°C	UL 746B
Relative Temp Index, Mech w/impact	105	°C	UL 746B
Relative Temp Index, Mech w/o impact	105	°C	UL 746B
PHYSICAL			
Specific Gravity	1.1	-	ASTM D 792
Water Absorption, equilibrium, 23C	0.06	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.5 - 0.7	%	SABIC Method
Mold Shrinkage on Tensile Bar, xflow (2)	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	7.4	g/10 min	ASTM D 1238
Melt Volume Rate, MVR at 280°C/5.0 kg	7	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.E+17	Ohm-cm	ASTM D 257
Surface Resistivity	1.E+17	Ohm	ASTM D 257
Dielectric Strength, in oil, 3.2 mm	19.4	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	2.68	-	ASTM D 150
Relative Permittivity, 1 MHz	2.63	-	ASTM D 150

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
ELECTRICAL			
Dissipation Factor, 50/60 Hz	0.0031	-	ASTM D 150
Dissipation Factor, 1 MHz	0.009	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	0	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	1.47	mm	UL 94

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 230C/50% relative humidity.
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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Injection Molding		
Drying Temperature	110 - 120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	300 - 325	°C
Nozzle Temperature	300 - 325	°C
Front - Zone 3 Temperature	290 - 325	°C
Middle - Zone 2 Temperature	275 - 320	°C
Rear - Zone 1 Temperature	265 - 315	°C
Mold Temperature	80 - 110	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	20 - 100	rpm
Shot to Cylinder Size	30 - 70	%

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