

Noryl* Resin PN235

Americas: COMMERCIAL

Plating grade, primarily automotive applications.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	370	kgf/cm ²	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	72	%	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	560	kgf/cm ²	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	18600	kgf/cm ²	ASTM D 790
IMPACT			
Izod Impact, notched, 23°C	35	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -40°C	13	cm-kgf/cm	ASTM D 256
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	112	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	104	°C	ASTM D 648
CTE, 0°C to 100°C, flow	7.56E-05	1/°C	ASTM E 831
Relative Temp Index, Elec	50	°C	UL 746B
Relative Temp Index, Mech w/impact	50	°C	UL 746B
Relative Temp Index, Mech w/o impact	50	°C	UL 746B
PHYSICAL			
Specific Gravity	1.05	-	ASTM D 792
Water Absorption, 24 hours	0.1	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method
ELECTRICAL			
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	3	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	2	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Recognized, 94HB 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 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 this or any other material under actual fire conditions.
4) Own measurement according to UL.
5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

Source, GMD, Last Update:

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
Injection Molding		
Drying Temperature	95 - 105	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	265 - 295	°C
Nozzle Temperature	265 - 295	°C
Front - Zone 3 Temperature	255 - 295	°C
Middle - Zone 2 Temperature	245 - 290	°C
Rear - Zone 1 Temperature	230 - 280	°C
Mold Temperature	65 - 95	°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

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