



## NORYL GTX™ Resin GTX966

### Americas: OBSOLETE

>PPE+PA66-I-TD10<Developmental gradename: EXNX0069.GTX966 is a mineral reinforced material. This grade offers excellent surface appearance and dimensional stability at elevated temperatures

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	660	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	610	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	4.5	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	40	%	ASTM D 638
Tensile Modulus, 5 mm/min	30500	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1010	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	30000	kgf/cm <sup>2</sup>	ASTM D 790
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	60	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.5	%	ISO 527
Tensile Strain, break, 50 mm/min	20	%	ISO 527
Tensile Modulus, 1 mm/min	3100	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	2900	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	6	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	6	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	254	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80*10 <sup>4</sup> +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10 <sup>4</sup> +23°C	7	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10 <sup>4</sup> -30°C	5	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10 <sup>4</sup> sp=62mm	8	kJ/m <sup>2</sup>	ISO 179/1eA

(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.  
 (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.  
 (6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	200	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	190	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.1E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.9E-05	1/°C	ASTM E 831
CTE, 23°C to 60°C, flow	7.E-05	1/°C	ISO 11359-2
CTE, 23°C to 60°C, xflow	7.5E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	195	°C	ISO 306
Vicat Softening Temp, Rate B/120	200	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	190	°C	ISO 75/Bf
<b>PHYSICAL</b>			
Specific Gravity	1.16	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2) (5)	1 - 1.2	%	SABIC Method
Mold Shrinkage, flow, 3.2 mm (5)	1 - 1.2	%	SABIC Method
Mold Shrinkage, xflow, 3.2 mm (5)	0.9 - 1.1	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	15	g/10 min	ASTM D 1238
Density	1.17	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	3.8	%	ISO 62
Moisture Absorption (23°C / 50% RH)	1.1	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	20	cm³/10 min	ISO 1133

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Injection Molding</b>		
Drying Temperature	100 - 120	°C
Drying Time	2 - 3	hrs
Maximum Moisture Content	0.07	%
Melt Temperature	290 - 320	°C
Nozzle Temperature	280 - 310	°C
Front - Zone 3 Temperature	290 - 320	°C
Middle - Zone 2 Temperature	280 - 300	°C
Rear - Zone 1 Temperature	260 - 280	°C
Hopper Temperature	60 - 80	°C
Mold Temperature	80 - 120	°C

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