NORYL GTX™ RESIN GTX934

REGION EUROPE

DESCRIPTION

NORYL GTX™ 934 resin is a non-reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA). This injection moldable grade exhibits improved processability and excellent heat aging performance. NORYL GTX934 resin was designed for high heat automotive under-the-hood applications.

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	65	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	55	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	60	%	ASTM D 638
Tensile Modulus, 50 mm/min	2300	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	95	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2350	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	55	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.5	%	ISO 527
Tensile Strain, break, 50 mm/min	25	%	ISO 527
Tensile Modulus, 1 mm/min	2400	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	2200	MPa	ISO 178
Ball Indentation Hardness, H358/30	85	MPa	ISO 2039-1
IMPACT			
Izod Impact, notched, 23°C	220	J/m	ASTM D 256
Izod Impact, notched, -30°C	100	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	60	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	20	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	10	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	20	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	10	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	205	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	190	°C	ASTM D 648
CTE, -40°C to 40°C, flow	7.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.5E-05	1/°C	ASTM E 831
Thermal Conductivity	0.23	W/m-°C	ISO 8302
CTE, 23°C to 60°C, flow	8.E-05	1/°C	ISO 11359-2
CTE, 23°C to 60°C, xflow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	250	°C	ISO 306
Vicat Softening Temp, Rate B/50	200	°C	ISO 306

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/120	205	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	190	°C	ISO 75/Be
Relative Temp Index, Elec [1]	100	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	100	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	85	°C	UL 746B
PHYSICAL			
Specific Gravity	1.09	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow	1.6 – 2	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	1.4 – 1.7	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	1.1 – 1.4	%	SABIC method
Melt Flow Rate, 280°C/5.0 kgf	13	g/10 min	ASTM D 1238
Density	1.09	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	3.5	%	ISO 62
Moisture Absorption (23°C / 50% RH)	1.21	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	13	cm³/10 min	ISO 1133
ELECTRICAL			
Comparative Tracking Index [2]	600	V	IEC 60112
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E45329-100066674	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	mm	UL 94
Glow Wire Flammability Index, 0.75 mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.5 mm	700	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0 mm	700	°C	IEC 60695-2-12
Glow Wire Ignitability Temperature, 0.75 mm	725	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	725	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	725	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.5 mm	725	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	725	°C	IEC 60695-2-13
INJECTION MOLDING			
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	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

(2) Value shown here is based on internal measurement.

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