

# NORYL™ RESIN V02570

REGION EUROPE

## DESCRIPTION

NORYL V02570 is a 25% milled fiber reinforced, injection moldable grade. Designed for good dimensional stability and low warpage, this resin also uses non-chlorinated, non-brominated FR additives to achieve a V0 UL94 rating at 1.0 mm. NORYL V02570 may be an excellent material candidate for application requiring electrically insulating properties, low warpage and thin wall flame resistance.

## TYPICAL PROPERTY VALUES

Revision 20180905

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	75	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	75	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	4	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	4	%	ASTM D 638
Tensile Modulus, 5 mm/min	3600	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	120	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	3800	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	73	MPa	ISO 527
Tensile Stress, break, 5 mm/min	73	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4	%	ISO 527
Tensile Strain, break, 5 mm/min	4	%	ISO 527
Tensile Modulus, 1 mm/min	4700	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	123	MPa	ISO 178
Flexural Stress, break, 2 mm/min	115	MPa	ISO 178
Flexural Modulus, 2 mm/min	3800	MPa	ISO 178
Hardness, H358/30	115	MPa	ISO 2039-1
<b>IMPACT</b>			
Izod Impact, notched, 23°C	35	J/m	ASTM D 256
Izod Impact, notched, -30°C	35	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	9	J	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	25	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	25	kJ/m <sup>2</sup>	ISO 180/1U
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m <sup>2</sup>	ISO 179/1eU
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	165	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	148	°C	ASTM D 648
CTE, -40°C to 40°C, flow	4.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	5.E-05	1/°C	ASTM E 831
Thermal Conductivity	0.28	W/m-°C	ISO 8302
CTE, 23°C to 80°C, flow	5.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	5.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Ball Pressure Test, approximate maximum	155	°C	IEC 60695-10-2

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/50	160	°C	ISO 306
Vicat Softening Temp, Rate B/120	167	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	155	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	145	°C	ISO 75/Ae
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
<b>PHYSICAL</b>			
Specific Gravity	1.35	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow	0.3 – 0.5	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.3 – 0.5	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	12	g/10 min	ASTM D 1238
Density	1.35	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	0.25	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 300°C/5.0 kg	8	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Hot Wire Ignition {PLC}	0	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Voltage Arc Resistance {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	1	PLC Code	UL 746A
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 0.8 mm	33	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	26	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	18	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.005	-	IEC 60250
Dissipation Factor, 1 MHz	0.004	-	IEC 60250
Comparative Tracking Index	250	V	IEC 60112
Relative Permittivity, 50/60 Hz	3	-	IEC 60250
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating	1	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	775	°C	IEC 60695-2-13
Oxygen Index (LOI)	32	%	ISO 4589
<b>INJECTION MOLDING</b>			
Drying Temperature	110 – 120	°C	
Drying Time	2 – 4	hrs	
Melt Temperature	290 – 330	°C	
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	310 – 330	°C	
Middle - Zone 2 Temperature	290 – 310	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Rear - Zone 1 Temperature	270 – 290	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	80 – 120	°C	

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