



NORYL™ Resin WCA901
Americas: COMMERCIAL

Non-Halogenated flame retardant, flexible NORYL resin intended for evaluation in wire and cable applications, capable of meeting VW-1 and 105°C end use temperature requirements as defined by UL 1581. Good processing performance by using standard extrusion equipment. UL1581 tests conducted on 2.0 mm wire with 0.12 mm x 20 stranded copper conductor.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, brk, Type I, 50 mm/min	230	kgf/cm ²	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	110	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	3900	kgf/cm ²	ASTM D 790
Hardness, Shore A, 30S reading	91	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	22	MPa	ISO 527
Tensile Strain, break, 50 mm/min	95	%	ISO 527
Flexural Modulus, 12.5 mm/min	390	MPa	ISO 178
Tear strength	13	N/mm	ISO 6383
IMPACT			
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL			
Specific Gravity	1.1	-	ASTM D 792
Melt Flow Rate, 250°C/10.0 kgf	10	g/10 min	ASTM D 1238
ELECTRICAL			
Volume Resistivity	5.1E+15	Ohm-cm	ASTM D 257
Surface Resistivity	4.2E+16	Ohm	ASTM D 257
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 1 MHz	0.004	-	IEC 60250
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS			
UL Compliant, 94V-0 Flame Class Rating (3)(4)	6	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 850°C, passes at	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	775	°C	IEC 60695-2-13
Oxygen Index (LOI)	27	%	ISO 4589
WIRE AND CABLE - UL 1581 tested on 2.0mm wire with 0.12mmx20 stranded copper			
Tensile strength @ break	26	MPa	UL 1581



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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
WIRE AND CABLE - UL 1581 tested on 2.0mm wire with 0.12mmx20 stranded copper			
Tensile elongation @ break	190	%	UL 1581
Tensile strength @ break after 7days @136°C	27	MPa	UL 1581
Tensile elongation @ break after 7days @136°C	127	%	UL 1581
UL temperature rating	105	°C	UL 1581
Heat Deformation at 121°C/250g	15	%	UL 1581
VW-1	Pass	-	UL 1581



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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Wire Coating Extrusion		
Drying Temperature	75 - 85	°C
Drying Time	5 - 7	hrs
Drying Time (Cumulative)	12	hrs
Maximum Moisture Content	0.02	%
Extruder Length/Diameter Ratio (L/D)	22:1 to 26:1	-
Screw Speed	15 - 85	rpm
Feed Zone Temperature	200 - 240	°C
Middle Zone Temperatures	240 - 270	°C
Head Zone Temperature	240 - 270	°C
Neck Temperature	240 - 270	°C
Cross-head Temperature	240 - 270	°C
Die Temperature	240 - 270	°C
Melt Temperature	240 - 270	°C
Conductor Pre-heat Temperature	80 - 150	°C
Screen Pack	150 - 100	-
Cooling Water Air Gap	100 - 200	mm
Water Bath Temperature	15 - 45	°C