

Noryl* Resin WCD891B

Americas: COMMERCIAL

Non-halogenated flame retardant, flexible Noryl resin intended for evaluation in wire and cable applications. Strong flame retardant performance capable of meeting VW-1 and 80°C end use temperature requirements as defined by UL 1581. 89 Shore A hardness. Good processing by using standard extrusion equipment. UL1581 tests conducted on 2.0 mm wire with 0.12 mm x 20 stranded copper conductor.

Property

TYPICAL PROPERTIES ⁽¹⁾			
MECHANICAL			
	Value	Unit	Standard
Tensile Stress, brk, Type I, 50 mm/min	16	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	170	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	160	MPa	ASTM D 790
Hardness, Shore A, 30S reading	89	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	15	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	140	%	ISO 527
Flexural Modulus, 12.5 mm/min	140	MPa	ISO 178
Tear strength	7	N/mm	ISO 6383
IMPACT			
	Value	Unit	Standard
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL			
	Value	Unit	Standard
Specific Gravity	1.1	-	ASTM D 792
Melt Flow Rate, 250°C/5.0 kgf	20	g/10 min	ASTM D 1238
ELECTRICAL			
	Value	Unit	Standard
Volume Resistivity	1.5E+15	Ohm-cm	ASTM D 257
Surface Resistivity	5.1E+15	Ohm	ASTM D 257
Dielectric strength in oil, 2.0mm	24	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 1 MHz	0.04	-	IEC 60250
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS			
	Value	Unit	Standard
UL Compliant, 94V-0 Flame Class Rating (3)(4)	4	mm	UL 94 by GE
Glow Wire Flammability Index 850°C, passes at	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	750	°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			
	Value	Unit	Standard
Tensile strength @ break	18	MPa	UL 1581
Tensile elongation @ break	215	%	UL 1581
Tensile strength @ break after 7days @113°C	21	MPa	UL 1581
Tensile elongation @ break after 7days @113°C	160	%	UL 1581
UL temperature rating	80	°C	UL 1581

Heat Deformation at 100°C/250g	9	%	UL 1581
VW-1	Pass	-	UL 1581

Source GMD, last updated:07/06/2007

Processing

Parameter	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	180 - 220	°C
Middle Zone Temperatures	220 - 250	°C
Head Zone Temperature	220 - 250	°C
Neck Temperature	220 - 250	°C
Cross-head Temperature	220 - 250	°C
Die Temperature	220 - 250	°C
Melt Temperature	220 - 250	°C
Conductor Pre-heat Temperature	25 - 120	°C
Screen Pack	150 - 100	-
Cooling Water Air Gap	100 - 200	mm
Water Bath Temperature	15 - 60	°C

Source GMD, last updated:07/06/2007

- NOTE: Recommended Drying Parameters are based on usage of Dehumidify Drying / Drying Oven.

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR [\(LOCAL SALES OFFICE\)](#) FOR AVAILABILITY IN YOUR REGION

(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.

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