SABIC Innovative Plastics™

Noryl* Resin WCD851

Asia Pacific: COMMERCIAL

Flexible, strong flame-retardant, halogen-free extrusion grade intended for evaluation in applications such as wire insulation and cable jacket. Flame retardant performance capable of meeting UL VW-1 requirement. 80C temperature rating as defined by UL 1581. 85 Shore A hardness. Processing typically conducted on standard extrusion equipment. UL 1581 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	17	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	147	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	150	MPa	ASTM D 790
Hardness, Shore A, 30S reading	85	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	16	MPa	ISO 527
Tensile Strain, break, 50 mm/min	122	%	ISO 527
Flexural Modulus, 12.5 mm/min	140	MPa	ISO 178
IMPACT	Value	Unit	Standard
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.09	-	ASTM D 792
Melt Flow Rate, 250°C/5.0 kgf	9.5	g/10 min	ASTM D 1238
ELECTRICAL	Value	Unit	Standard
Volume Resistivity	2.5E+15	Ohm-cm	ASTM D 257
Relative Permittivity, 1 MHz	2.7	-	ASTM D 150
Dissipation Factor, 1 MHz	0.003	-	ASTM D 150
Dielectric strength in oil, 2.0mm	26	kV/mm	IEC 60243-1
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS	Value	Unit	Standard
Smoke Density on 0.5mm plaque, Non-flame, Ds, max	76	-	ASTM E 662
Smoke Density on 0.5mm plaque, Flame, Ds, max	94	-	ASTM E 662
Glow Wire Flammability Index 960°C, passes at	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13
Oxygen Index (LOI)	26	%	ISO 4589
WIRE AND CABLE - UL 1581 tested on 2.0mm wire with 0.12mmx20 stranded copper	Value	Unit	Standard
Tensile strength @ break	19	MPa	UL 1581
Tensile elongation @ break	200	%	UL 1581
Tensile strength @ break after 7days @113°C	21	MPa	UL 1581
Tensile elongation @ break after 7days @113°C	165	%	UL 1581
UL temperature rating	80	°C	UL 1581
Heat Deformation at 100°C/250g	17	%	UL 1581

VW-1	Pass	-	UL 1581

Source GMD, last updated:02/26/2008

Processing

Parameter Wire Coating Extrusion	Value	Unit
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 - 230	°C
Middle Zone Temperatures	230 - 260	°C
Head Zone Temperature	230 - 260	°C
Neck Temperature	230 - 260	°C
Cross-head Temperature	230 - 260	°C
Die Temperature	230 - 260	°C
Melt Temperature	230 - 260	°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:02/26/2008

• 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.

* Noryl is a trademark of the SABIC Innovative Plastics Company