SABIC Innovative Plastics™

Noryl* Resin WCA875

Asia Pacific: COMMERCIAL

Non-halogenated flame retardant Flexible Noryl extrusion grade intended for evaluation in applications such as wire insulation and cable jacket. Excellent flame retardant performance with balanced tensile elongation, capable of VW-1 performance and 105C temperature rating as defined by UL 1581. 87 Shore A hardness. Processing typically conducted on standard extrusion equipment. UL 1581 tests conducted on 2.0mm wire with 0.12mm X 20 stranded coppoer 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	180	%	ASTM D 638
Flexural Modulus, 12.5 mm/min, 100 mm span	40	MPa	ASTM D 790
Hardness, Shore A, 30S reading	87	-	ASTM D 2240
Tensile Stress, break, 50 mm/min	16	MPa	ISO 527
Tensile Strain, break, 50 mm/min	170	%	ISO 527
Flexural Modulus, 12.5 mm/min	40	MPa	ISO 178
IMPACT	Value	Unit	Standard
Brittleness Temperature	<-40	°C	ASTM D 746
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.03	-	ASTM D 792
Melt Flow Rate, 250°C/10.0 kgf	16	g/10 min	ASTM D 1238
ELECTRICAL	Value	Unit	Standard
Volume Resistivity	2.E+00 - 1.E+17	Ohm-cm	ASTM D 257
Dielectric strength in oil, 2.0mm	22.8	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 1 MHz	0.0035	-	IEC 60250
Comparative Tracking Index	600	V	IEC 60112
FLAME CHARACTERISTICS	Value	Unit	Standard
Smoke Density on 0.5mm plaque, Non-flame, Ds, max	112	-	ASTM E 662
Smoke Density on 0.5mm plaque, Flame, Ds, max	146	-	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)	29	%	ISO 4589
WIRE AND CABLE - UL 1581 tested on 2.0mm wire with 0.12mmx20 stranded copper	Value	Unit	Standard
Tensile strength @ break	27	MPa	UL 1581
Tensile elongation @ break	250	%	UL 1581
Tensile strength @ break after 7days @136°C	26	MPa	UL 1581
Tensile elongation @ break after 7days @136°C	190	%	UL 1581
UL temperature rating	105	°C	UL 1581
Heat Deformation at 121°C/250g	10	%	UL 1581

VW-1	Pass	-	UL 1581

Source GMD, last updated:2010/04/26

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 - 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:2010/04/26

• 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.
(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

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