



**NORYL™ Resin WCV072**  
**Americas: COMMERCIAL**

Flexible, halogen free mPPE extrusion grade material for applications such as automotive wire insulation. Low specific gravity with good flame retardant and very good scrape abrasion resistance. Designed for evaluation in applications requiring ISO6722. 72 Shore D hardness. Processed using standard extrusion equipment.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	440	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	420	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	15	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	83	%	ASTM D 638
Tensile Modulus, 50 mm/min	17400	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	540	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	15800	kgf/cm <sup>2</sup>	ASTM D 790
Tensile Stress, yield, 50 mm/min	44	MPa	ISO 527
Tensile Stress, break, 50 mm/min	42	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	11	%	ISO 527
Tensile Strain, break, 50 mm/min	46	%	ISO 527
Tensile Modulus, 1 mm/min	1750	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	59	MPa	ISO 178
Flexural Modulus, 2 mm/min	1740	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	31	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	6	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	468	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	36	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	6	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	33	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	114	°C	ASTM D 1525

(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.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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<b>THERMAL</b>			
HDT, 1.82 MPa, 3.2mm, unannealed	92	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	1.05E-04	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	8.4E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	1.11E-04	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	114	°C	ISO 306
Vicat Softening Temp, Rate B/120	117	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	98	°C	ISO 75/Af
<b>PHYSICAL</b>			
Specific Gravity	1.03	-	ASTM D 792
Melt Flow Rate, 280°C/5.0 kgf	13.8	g/10 min	ASTM D 1238
Density	1.03	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	0.12	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	13	cm <sup>3</sup> /10 min	ISO 1133

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Wire Coating Extrusion</b>		
Drying Temperature	60 - 80	°C
Drying Time	4 - 6	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 - 40	rpm
Feed Zone Temperature	210 - 260	°C
Middle Zone Temperatures	230 - 285	°C
Head Zone Temperature	250 - 285	°C
Neck Temperature	250 - 285	°C
Cross-head Temperature	250 - 285	°C
Die Temperature	250 - 285	°C
Melt Temperature	250 - 285	°C
Conductor Pre-heat Temperature	80 - 150	°C
Screen Pack	150 - 100	-
Cooling Water Air Gap	100 - 200	mm
Water Bath Temperature	15 - 80	°C

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

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