

Noryl* Resin WCD825

Asia Pacific: COMMERCIAL

Flexible, very low-migration, 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 and excellent heat deformation performance as defined by UL 1581. 82 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 | 16 | MPa | ASTM D 638 |
| Tensile Strain, brk, Type I, 50 mm/min | 220 | % | ASTM D 638 |
| Flexural Modulus, 12.5 mm/min, 100 mm span | 20 | MPa | ASTM D 790 |
| Hardness, Shore A, 30S reading | 82 | - | ASTM D 2240 |
| Tensile Stress, break, 50 mm/min | 15 | MPa | ISO 527 |
| Tensile Strain, break, 50 mm/min | 203 | % | ISO 527 |
| Flexural Modulus, 12.5 mm/min | 20 | MPa | ISO 178 |
| IMPACT | | | |
| | Value | Unit | Standard |
| Brittleness Temperature | <-40 | °C | ASTM D 746 |
| PHYSICAL | | | |
| | Value | Unit | Standard |
| Specific Gravity | 1.02 | - | ASTM D 792 |
| Melt Flow Rate, 250°C/5.0 kgf | 3.2 | g/10 min | ASTM D 1238 |
| ELECTRICAL | | | |
| | Value | Unit | Standard |
| Volume Resistivity | 5.8E+15 | Ohm-cm | ASTM D 257 |
| Relative Permittivity, 1 MHz | 2.6 | - | ASTM D 150 |
| Dissipation Factor, 1 MHz | 0.003 | - | ASTM D 150 |
| Dielectric strength in oil, 2.0mm | 25 | 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 | 60 | - | ASTM E 662 |
| Smoke Density on 0.5mm plaque, Flame, Ds, max | 110 | - | 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) | 25 | % | ISO 4589 |
| WIRE AND CABLE - UL 1581 tested on 2.0mm wire with 0.12mmx20 stranded copper | | | |
| | Value | Unit | Standard |
| Tensile strength @ break | 21 | MPa | UL 1581 |
| Tensile elongation @ break | 245 | % | UL 1581 |
| Tensile strength @ break after 7days @113°C | 20 | MPa | UL 1581 |
| Tensile elongation @ break after 7days @113°C | 190 | % | UL 1581 |
| UL temperature rating | 80 | °C | UL 1581 |
| Heat Deformation at 100°C/250g | 7 | % | UL 1581 |

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 - 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.

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