

FLEX NORYL™ RESIN WCD933

REGION ASIA

DESCRIPTION

Flexible and non-halogenated flame retardant extrusion grade intended for evaluation in applications such as insulation of HD 21.14 flexible cables. Flame retardant performance capable of meeting EN 50265-2-1 requirement. 93 Shore A hardness. Processing typically conducted on standard extrusion equipment. Wire tests conducted on 2.0 mm wire with 0.12 mm x 20 stranded copper conductor.

TYPICAL PROPERTY VALUES

Revision 20181012

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|----------|----------------|
| MECHANICAL | | | |
| Tensile Stress, brk, Type I, 50 mm/min | 9 | MPa | ASTM D 638 |
| Tensile Strain, brk, Type I, 50 mm/min | 130 | % | ASTM D 638 |
| Flexural Modulus, 12.5 mm/min, 100 mm span | 160 | MPa | ASTM D 790 |
| Hardness, Shore A, 30S reading | 93 | - | ASTM D 2240 |
| Tensile Stress, break, 50 mm/min | 9 | MPa | ISO 527 |
| Tensile Strain, break, 50 mm/min | 175 | % | ISO 527 |
| Flexural Modulus, 12.5 mm/min | 130 | MPa | ISO 178 |
| IMPACT | | | |
| Brittleness Temperature | <-40 | °C | ASTM D 746 |
| PHYSICAL | | | |
| Specific Gravity | 1.33 | - | ASTM D 792 |
| Melt Flow Rate, 250°C/10.0 kgf | 8.5 | g/10 min | ASTM D 1238 |
| ELECTRICAL | | | |
| Volume Resistivity | 2.E+15 | Ohm-cm | ASTM D 257 |
| Relative Permittivity, 1 MHz | 3 | - | ASTM D 150 |
| Dissipation Factor, 1 MHz | 0.001 | - | ASTM D 150 |
| Dielectric strength in oil, 2.0mm | 22.9 | kV/mm | IEC 60243-1 |
| Comparative Tracking Index | 600 | V | IEC 60112 |
| FLAME CHARACTERISTICS | | | |
| Smoke Density on 0.5mm plaque, Non-flame, Ds, max | 152 | - | ASTM E 662 |
| Smoke Density on 0.5mm plaque, Flame, Ds, max | 56 | - | ASTM E 662 |
| Glow Wire Flammability Index 750°C, passes at | 3 | mm | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 3.0 mm | 775 | °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 | | | |
| Tensile strength @ break | 15 | MPa | UL 1581 |
| Tensile elongation @ break | 306 | % | UL 1581 |
| Tensile strength @ break after 7days @80°C | 15 | MPa | UL 1581 |
| Tensile elongation @ break after 7days @80°C | 267 | % | UL 1581 |
| Heat Deformation at 100°C/250g | 10 | % | UL 1581 |
| Vertical Flame Test | PASSES | - | EN 50265-2-1 |
| WIRE COATING EXTRUSION | | | |
| Drying Temperature | 75 – 85 | °C | |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|--------------------------------------|----------------|-------|--------------|
| 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 | |

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