



**NORYL™ Resin WCV065**  
**Americas: COMMERCIAL**

Flexible, non-halogenated FR, PPE+Polyolefin resin designed for evaluation in Automotive ISO6722 Class A-C applications.

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                | Standard    |
|----------------------------------------------|---------------|---------------------|-------------|
| <b>MECHANICAL</b>                            |               |                     |             |
| Tensile Stress, yld, Type I, 50 mm/min       | 370           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Stress, brk, Type I, 50 mm/min       | 370           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Strain, yld, Type I, 50 mm/min       | 37            | %                   | ASTM D 638  |
| Tensile Strain, brk, Type I, 50 mm/min       | 45            | %                   | ASTM D 638  |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 410           | kgf/cm <sup>2</sup> | ASTM D 790  |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 11700         | kgf/cm <sup>2</sup> | ASTM D 790  |
| Hardness, Shore D, 30S reading               | 65            | -                   | ASTM D 2240 |
| Tensile Stress, yield, 50 mm/min             | 39            | MPa                 | ISO 527     |
| Tensile Stress, break, 50 mm/min             | 37            | MPa                 | ISO 527     |
| Tensile Strain, yield, 50 mm/min             | 17            | %                   | ISO 527     |
| Tensile Strain, break, 50 mm/min             | 38            | %                   | ISO 527     |
| Tensile Modulus, 1 mm/min                    | 1450          | MPa                 | ISO 527     |
| Flexural Stress, yield, 2 mm/min             | 44            | MPa                 | ISO 178     |
| Flexural Modulus, 2 mm/min                   | 1260          | MPa                 | ISO 178     |
| <b>IMPACT</b>                                |               |                     |             |
| Izod Impact, notched, 23°C                   | 56            | cm-kgf/cm           | ASTM D 256  |
| Instrumented Impact Total Energy, 23°C       | 336           | cm-kgf              | ASTM D 3763 |
| Instrumented Impact Total Energy, -30°C      | 428           | cm-kgf              | ASTM D 3763 |
| Izod Impact, notched 80*10*4 +23°C           | 41            | kJ/m <sup>2</sup>   | ISO 180/1A  |
| Izod Impact, notched 80*10*4 -30°C           | 9             | kJ/m <sup>2</sup>   | ISO 180/1A  |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 43            | kJ/m <sup>2</sup>   | ISO 179/1eA |
| <b>THERMAL</b>                               |               |                     |             |
| Vicat Softening Temp, Rate B/50              | 71            | °C                  | ASTM D 1525 |



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|---------------------------------------|---------------|-------------------------|-------------|
| <b>THERMAL</b>                        |               |                         |             |
| HDT, 0.45 MPa, 3.2 mm, unannealed     | 115           | °C                      | ASTM D 648  |
| HDT, 1.82 MPa, 3.2mm, unannealed      | 84            | °C                      | ASTM D 648  |
| CTE, -40°C to 40°C, flow              | 8.2E-05       | 1/°C                    | ASTM E 831  |
| CTE, -40°C to 40°C, xflow             | 1.31E-04      | 1/°C                    | ASTM E 831  |
| Vicat Softening Temp, Rate B/50       | 71            | °C                      | ISO 306     |
| Vicat Softening Temp, Rate B/120      | 76            | °C                      | ISO 306     |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 93            | °C                      | ISO 75/Af   |
| <b>PHYSICAL</b>                       |               |                         |             |
| Specific Gravity                      | 1.04          | -                       | ASTM D 792  |
| Melt Flow Rate, 280°C/5.0 kgf         | 20.2          | g/10 min                | ASTM D 1238 |
| Melt Volume Rate, MVR at 280°C/5.0 kg | 20            | cm <sup>3</sup> /10 min | ISO 1133    |
| <b>ELECTRICAL</b>                     |               |                         |             |
| Relative Permittivity, 1 MHz          | 2.5           | -                       | IEC 60250   |
| Dissipation Factor, 1 MHz             | 0.002         | -                       | IEC 60250   |



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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.