

# NORYL™ WCV063 resin

Polyphenylene Ether + SEBS + Polyolefin

SABIC Innovative Plastics

## Message:

Flexible, non-halogenated FR, mPPE extrusion grade material for evaluation in automotive wire coating applications requiring ISO6722.

| General Information                      |                                 |                   |              |
|------------------------------------------|---------------------------------|-------------------|--------------|
| Features                                 | Good flexibility                |                   |              |
|                                          | Halogen-free                    |                   |              |
|                                          | Flame retardancy                |                   |              |
| Uses                                     | Wire and cable applications     |                   |              |
|                                          | Wire sheath                     |                   |              |
|                                          | Application in Automobile Field |                   |              |
| Agency Ratings                           | ISO 6722                        |                   |              |
| RoHS Compliance                          | RoHS compliance                 |                   |              |
| Processing Method                        | Extrusion coating               |                   |              |
| Physical                                 | Nominal Value                   | Unit              | Test Method  |
| Specific Gravity                         | 1.03                            | g/cm <sup>3</sup> | ASTM D792    |
| Melt Mass-Flow Rate (MFR) (280°C/5.0 kg) | 33                              | g/10 min          | ASTM D1238   |
| Hardness                                 | Nominal Value                   | Unit              | Test Method  |
| Durometer Hardness (Shore D, 10 sec)     | 63                              |                   | ASTM D2240   |
| Mechanical                               | Nominal Value                   | Unit              | Test Method  |
| Tensile Modulus                          |                                 |                   |              |
| -- <sup>1</sup>                          | 840                             | MPa               | ASTM D638    |
| --                                       | 690                             | MPa               | ISO 527-2/1  |
| Tensile Strength                         |                                 |                   |              |
| Yield <sup>2</sup>                       | 28.0                            | MPa               | ASTM D638    |
| Yield                                    | 25.0                            | MPa               | ISO 527-2    |
| Fracture <sup>3</sup>                    | 28.0                            | MPa               | ASTM D638    |
| Fracture                                 | 25.0                            | MPa               | ISO 527-2/50 |
| Tensile Strain                           |                                 |                   |              |
| Yield                                    | 20                              | %                 | ISO 527-2/50 |
| Fracture <sup>4</sup>                    | 90                              | %                 | ASTM D638    |
| Fracture                                 | 50                              | %                 | ISO 527-2/50 |
| Flexural Modulus                         |                                 |                   |              |
| 50.0mm span <sup>5</sup>                 | 720                             | MPa               | ASTM D790    |
| --                                       | 790                             | MPa               | ISO 178      |
| Impact                                   | Nominal Value                   | Unit              | Test Method  |

|                                                                                                                                                                                                                                                                                                                                      |                  |                   |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|-------------|
| Notched Izod Impact                                                                                                                                                                                                                                                                                                                  |                  |                   |             |
| -30°C                                                                                                                                                                                                                                                                                                                                | 170              | J/m               | ASTM D256   |
| 23°C                                                                                                                                                                                                                                                                                                                                 | 560              | J/m               | ASTM D256   |
| -30°C <sup>6</sup>                                                                                                                                                                                                                                                                                                                   | 14               | kJ/m <sup>2</sup> | ISO 180/1A  |
| 23°C <sup>7</sup>                                                                                                                                                                                                                                                                                                                    | 37               | kJ/m <sup>2</sup> | ISO 180/1A  |
| Thermal                                                                                                                                                                                                                                                                                                                              | Nominal Value    | Unit              | Test Method |
| Deflection Temperature Under Load                                                                                                                                                                                                                                                                                                    |                  |                   |             |
| 0.45 MPa, unannealed, 3.20mm                                                                                                                                                                                                                                                                                                         | 82.0             | °C                | ASTM D648   |
| 1.8 MPa, unannealed, 3.20mm                                                                                                                                                                                                                                                                                                          | 56.0             | °C                | ASTM D648   |
| 1.8 MPa, unannealed, 64.0mm span <sup>8</sup>                                                                                                                                                                                                                                                                                        | 66.0             | °C                | ISO 75-2/Af |
| Electrical                                                                                                                                                                                                                                                                                                                           | Nominal Value    |                   | Test Method |
| Dielectric Constant (1.00 GHz)                                                                                                                                                                                                                                                                                                       | 2.47             |                   | ASTM D150   |
| Dissipation Factor (1.00 GHz)                                                                                                                                                                                                                                                                                                        | 3.2E-3           |                   | ASTM D150   |
| Extrusion                                                                                                                                                                                                                                                                                                                            | Nominal Value    | Unit              |             |
| Drying Temperature                                                                                                                                                                                                                                                                                                                   | 80.0 - 100       | °C                |             |
| Drying Time                                                                                                                                                                                                                                                                                                                          | 4.0 - 6.0        | hr                |             |
| Suggested Max Moisture                                                                                                                                                                                                                                                                                                               | 0.020            | %                 |             |
| Cylinder Zone 1 Temp.                                                                                                                                                                                                                                                                                                                | 200 - 260        | °C                |             |
| Cylinder Zone 3 Temp.                                                                                                                                                                                                                                                                                                                | 270 - 300        | °C                |             |
| Cylinder Zone 5 Temp.                                                                                                                                                                                                                                                                                                                | 280 - 300        | °C                |             |
| Melt Temperature                                                                                                                                                                                                                                                                                                                     | 280 - 300        | °C                |             |
| Die Temperature                                                                                                                                                                                                                                                                                                                      | 280 - 300        | °C                |             |
| Extrusion instructions                                                                                                                                                                                                                                                                                                               |                  |                   |             |
| Compression Ratio 2;1-3:1Conductor Pre-heat Temperature: 100 - 150 °CCooling Water Air Gap: 100 - 1000 mmCross-head Temperature: 280 - 300 °CDrying Time (Cumulative): 8 hrsExtruder Length/Diameter Ratio (L/D): >24:1Neck Temperature: 280 - 300 °CScreen Pack: 60/200/60Screw Speed: 5 - 60 rpmWater Bath Temperature: 15 - 30 °C |                  |                   |             |
| NOTE                                                                                                                                                                                                                                                                                                                                 |                  |                   |             |
| 1.                                                                                                                                                                                                                                                                                                                                   | 50 mm/min        |                   |             |
| 2.                                                                                                                                                                                                                                                                                                                                   | Type 1, 50mm/min |                   |             |
| 3.                                                                                                                                                                                                                                                                                                                                   | Type 1, 50mm/min |                   |             |
| 4.                                                                                                                                                                                                                                                                                                                                   | Type 1, 50mm/min |                   |             |
| 5.                                                                                                                                                                                                                                                                                                                                   | 1.3 mm/min       |                   |             |
| 6.                                                                                                                                                                                                                                                                                                                                   | 80*10*4          |                   |             |
| 7.                                                                                                                                                                                                                                                                                                                                   | 80*10*4          |                   |             |
| 8.                                                                                                                                                                                                                                                                                                                                   | 80*10*4 mm       |                   |             |

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Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

