

# NORYL™ WCP921 resin

Polyphenylene Ether + TPE

SABIC Innovative Plastics Asia Pacific

## Message:

Flexible NORYL injection molding grade. Low specific gravity with good non-halogenated flame retardant performance. Developed for evaluation in overmolding applications such as plugs, strain reliefs, and connectors. UL 94 V-0 performance with good processability.

| General Information                         |                              |                   |              |
|---------------------------------------------|------------------------------|-------------------|--------------|
| Features                                    | Low density                  |                   |              |
|                                             | Workability, good            |                   |              |
|                                             | Good flexibility             |                   |              |
|                                             | Halogen-free                 |                   |              |
|                                             | Flame retardancy             |                   |              |
| Uses                                        | overmolding                  |                   |              |
|                                             | Plug                         |                   |              |
|                                             | Connector                    |                   |              |
|                                             | Fatigue elimination supplies |                   |              |
| Processing Method                           | Injection molding            |                   |              |
| Physical                                    | Nominal Value                | Unit              | Test Method  |
| Specific Gravity                            | 1.04                         | g/cm <sup>3</sup> | ASTM D792    |
| Melt Mass-Flow Rate (MFR)                   |                              |                   | ASTM D1238   |
| 210°C/5.0 kg                                | 15                           | g/10 min          | ASTM D1238   |
| 250°C/2.16 kg                               | 17                           | g/10 min          | ASTM D1238   |
| Molding Shrinkage                           |                              |                   | ASTM D955    |
| Flow: 24 hours                              | 0.55                         | %                 | ASTM D955    |
| Transverse flow: 24 hours                   | 0.65                         | %                 | ASTM D955    |
| Water Absorption <sup>1</sup> (23°C, 24 hr) | 0.060                        | %                 | ASTM D570    |
| Hardness                                    | Nominal Value                | Unit              | Test Method  |
| Durometer Hardness (Shore A, 30 sec)        | 88                           |                   | ASTM D2240   |
| Mechanical                                  | Nominal Value                | Unit              | Test Method  |
| Tensile Strength                            |                              |                   |              |
| Fracture <sup>2</sup>                       | 15.0                         | MPa               | ASTM D638    |
| Fracture                                    | 15.0                         | MPa               | ISO 527-2/50 |
| Tensile Elongation                          |                              |                   |              |
| Fracture <sup>3</sup>                       | 150                          | %                 | ASTM D638    |
| Fracture                                    | 140                          | %                 | ISO 527-2/50 |
| Flexural Modulus <sup>4</sup>               |                              |                   |              |
| 100mm span                                  | 180                          | MPa               | ASTM D790    |

|                                          |                            |             |                    |
|------------------------------------------|----------------------------|-------------|--------------------|
| --                                       | 200                        | MPa         | ISO 178            |
| <b>Thermal</b>                           | <b>Nominal Value</b>       | <b>Unit</b> | <b>Test Method</b> |
| Brittleness Temperature                  | < -40.0                    | °C          | ASTM D746          |
| <b>Electrical</b>                        | <b>Nominal Value</b>       | <b>Unit</b> | <b>Test Method</b> |
| Volume Resistivity                       | 7.1E+15                    | ohms·cm     | ASTM D257          |
| Dielectric Strength (2.00 mm, in Oil)    | 25                         | kV/mm       | IEC 60243-1        |
| Relative Permittivity (1 MHz)            | 2.80                       |             | IEC 60250          |
| Dissipation Factor (1 MHz)               | 0.029                      |             | IEC 60250          |
| Comparative Tracking Index               | 600                        | V           | IEC 60112          |
| <b>Flammability</b>                      | <b>Nominal Value</b>       | <b>Unit</b> | <b>Test Method</b> |
| Flame Rating (6.00 mm)                   | V-0                        |             | UL 94              |
| Glow Wire Flammability Index (3.00 mm)   | 850                        | °C          | IEC 60695-2-12     |
| Glow Wire Ignition Temperature (3.00 mm) | 725                        | °C          | IEC 60695-2-13     |
| Oxygen Index                             | 24                         | %           | ISO 4589-2         |
| <b>Injection</b>                         | <b>Nominal Value</b>       | <b>Unit</b> |                    |
| Drying Temperature                       | 60.0 - 80.0                | °C          |                    |
| Drying Time                              | 4.0 - 6.0                  | hr          |                    |
| Drying Time, Maximum                     | 8.0                        | hr          |                    |
| Suggested Max Moisture                   | 0.010                      | %           |                    |
| Suggested Shot Size                      | 30 - 70                    | %           |                    |
| Rear Temperature                         | 180 - 220                  | °C          |                    |
| Middle Temperature                       | 210 - 240                  | °C          |                    |
| Front Temperature                        | 220 - 250                  | °C          |                    |
| Nozzle Temperature                       | 220 - 250                  | °C          |                    |
| Processing (Melt) Temp                   | 220 - 250                  | °C          |                    |
| Mold Temperature                         | 40.0 - 60.0                | °C          |                    |
| Back Pressure                            | 3.00 - 10.0                | MPa         |                    |
| Screw Speed                              | 30 - 80                    | rpm         |                    |
| Vent Depth                               | 0.030 - 0.050              | mm          |                    |
| <b>NOTE</b>                              |                            |             |                    |
| 1.                                       | Results measured at 48 hrs |             |                    |
| 2.                                       | Type 1, 50mm/min           |             |                    |
| 3.                                       | Type 1, 50mm/min           |             |                    |
| 4.                                       | 13 mm/min                  |             |                    |

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