

# PREPERM® 255

Polyphenylene Ether

Premix Oy

## Message:

PREPERM® 255 is a special compound based on Premix proprietary PPE technology. Extremely low dissipation factor (0.0005) makes PREPERM® 255 an excellent material for high frequency applications. PREPERM® 255 offers stable dielectric constant over wide frequency and wide temperature range. PREPERM® retains its physical properties at very low (-78°C) temperatures. PREPERM® 255 can be injection moulded or extruded.

Applications include structural parts for antennas in base stations, point to point, wlan, mobile phones etc. Devices made out of PREPERM® 255 can operate at very high frequencies as PREPERM® 255 offers stable performance even at 120 GHz.

| General Information |                                                             |
|---------------------|-------------------------------------------------------------|
| Features            | Low temperature strength<br>Low Temperature Flexibility     |
| Uses                | Electrical/Electronic Applications<br>Electrical components |
| RoHS Compliance     | RoHS compliance                                             |
| Forms               | Particles                                                   |
| Processing Method   | Extrusion<br>Injection molding                              |

| Physical                         | Nominal Value | Unit              | Test Method |
|----------------------------------|---------------|-------------------|-------------|
| Density                          | 1.05          | g/cm <sup>3</sup> | ISO 1183    |
| Melt Mass-Flow Rate (MFR)        |               |                   | ISO 1133    |
| 300°C/2.16 kg                    | 5.0           | g/10 min          | ISO 1133    |
| 300°C/5.0 kg                     | 15            | g/10 min          | ISO 1133    |
| Molding Shrinkage - Flow         | 0.90          | %                 | ISO 294-4   |
| Mechanical                       | Nominal Value | Unit              | Test Method |
| Tensile Stress                   |               |                   | ISO 527-2   |
| Yield, 4.00mm                    | 65.0          | MPa               | ISO 527-2   |
| 4.00 mm                          | 45.0          | MPa               | ISO 527-2   |
| Tensile Strain                   |               |                   | ISO 527-2   |
| Yield, 4.00mm                    | 10            | %                 | ISO 527-2   |
| Fracture, 4.00mm                 | 40            | %                 | ISO 527-2   |
| Flexural Modulus (4.00 mm)       | 2200          | MPa               | ISO 178     |
| Impact                           | Nominal Value | Unit              | Test Method |
| Notched Izod Impact <sup>1</sup> |               |                   | ISO 180     |
| -78°C                            | 10            | kJ/m <sup>2</sup> | ISO 180     |
| -20°C                            | 10            | kJ/m <sup>2</sup> | ISO 180     |
| 23°C                             | 20            | kJ/m <sup>2</sup> | ISO 180     |

|                                             |                |                 |             |
|---------------------------------------------|----------------|-----------------|-------------|
| Unnotched Izod Impact Strength <sup>2</sup> |                | ISO 180         |             |
| -78°C                                       | No Break       | ISO 180         |             |
| -20°C                                       | No Break       | ISO 180         |             |
| 23°C                                        | No Break       | ISO 180         |             |
| Thermal                                     | Nominal Value  | Unit            | Test Method |
| Heat Deflection Temperature                 |                |                 |             |
| 0.45 MPa, not annealed                      | 190            | °C              | ISO 75-2/Bf |
| 1.8 MPa, not annealed                       | 167            | °C              | ISO 75-2/Af |
| Vicat Softening Temperature                 |                |                 |             |
| --                                          | 210            | °C              | ISO 306/A50 |
| --                                          | 160            | °C              | ISO 306/B50 |
| Electrical                                  | Nominal Value  | Test Method     |             |
| Dielectric Constant (1.00 GHz)              | 2.55           | Internal method |             |
| Dissipation Factor (1.00 GHz)               | 5.0E-4         | Internal method |             |
| Flammability                                | Nominal Value  | Test Method     |             |
| Flame Rating (4.00 mm)                      | V-1            | UL 94           |             |
| Injection                                   | Nominal Value  | Unit            |             |
| Drying Temperature                          | 120 - 140      | °C              |             |
| Drying Time                                 | 2.0 - 4.0      | hr              |             |
| Processing (Melt) Temp                      | 280 - 300      | °C              |             |
| Mold Temperature                            | 80.0 - 140     | °C              |             |
| Injection Pressure                          | 60.0 - 80.0    | MPa             |             |
| Injection Rate                              | Moderate       |                 |             |
| Extrusion                                   | Nominal Value  | Unit            |             |
| Drying Temperature                          | 120 - 140      | °C              |             |
| Drying Time                                 | 2.0 - 4.0      | hr              |             |
| Melt Temperature                            | 260 - 280      | °C              |             |
| Die Temperature                             | 260 - 300      | °C              |             |
| Extrusion instructions                      |                |                 |             |
| Tool / roll temperature : 60 - 180°C        |                |                 |             |
| NOTE                                        |                |                 |             |
| 1.                                          | 4 mm thickness |                 |             |
| 2.                                          | 4 mm thickness |                 |             |

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