

# LEXAN™ OQ4005 resin

Polycarbonate

SABIC Innovative Plastics Asia Pacific

## Message:

High Viscosity, UV-stabilized PC for ophthalmic lenses.

| General Information                        |                    |                        |                 |
|--------------------------------------------|--------------------|------------------------|-----------------|
| Additive                                   | UV stabilizer      |                        |                 |
| Features                                   | Good UV resistance |                        |                 |
|                                            | Viscosity, High    |                        |                 |
| Uses                                       | Lens               |                        |                 |
| RoHS Compliance                            | RoHS compliance    |                        |                 |
| Processing Method                          | Injection molding  |                        |                 |
| Physical                                   | Nominal Value      | Unit                   | Test Method     |
| Density                                    | 1.20               | g/cm <sup>3</sup>      | ISO 1183        |
| Melt Volume-Flow Rate (MVR) (300°C/1.2 kg) | 8.00               | cm <sup>3</sup> /10min | ISO 1133        |
| Molding Shrinkage                          |                    |                        | Internal method |
| Flow                                       | 0.77               | %                      | Internal method |
| Transverse flow                            | 0.77               | %                      | Internal method |
| Water Absorption (Saturation, 23°C)        | 0.14               | %                      | ISO 62          |
| Mechanical                                 | Nominal Value      | Unit                   | Test Method     |
| Tensile Modulus                            | 2310               | MPa                    | ISO 527-2/1     |
| Tensile Stress                             |                    |                        | ISO 527-2/50    |
| Yield                                      | 64.0               | MPa                    | ISO 527-2/50    |
| Fracture                                   | 61.0               | MPa                    | ISO 527-2/50    |
| Tensile Strain                             |                    |                        | ISO 527-2/50    |
| Yield                                      | 6.0                | %                      | ISO 527-2/50    |
| Fracture                                   | 85                 | %                      | ISO 527-2/50    |
| Flexural Modulus <sup>1</sup>              | 2380               | MPa                    | ISO 178         |
| Flexural Stress                            | 94.0               | MPa                    | ISO 178         |
| Impact                                     | Nominal Value      | Unit                   | Test Method     |
| Notched Izod Impact                        |                    |                        | ASTM D256       |
| -30°C                                      | 130                | J/m                    | ASTM D256       |
| 23°C                                       | 910                | J/m                    | ASTM D256       |
| Unnotched Izod Impact                      |                    |                        | ASTM D4812      |
| -30°C                                      | No Break           |                        | ASTM D4812      |
| 23°C                                       | No Break           |                        | ASTM D4812      |
| Thermal                                    | Nominal Value      | Unit                   | Test Method     |

|                                   |               |          |                 |
|-----------------------------------|---------------|----------|-----------------|
| Deflection Temperature Under Load |               |          | ASTM D648       |
| 1.8 MPa, unannealed, 3.20mm       | 124           | °C       | ASTM D648       |
| 1.8 MPa, unannealed, 6.40mm       | 126           | °C       | ASTM D648       |
| Vicat Softening Temperature       |               |          |                 |
| --                                | 143           | °C       | ISO 306/B50     |
| --                                | 145           | °C       | ISO 306/B120    |
| Ball Pressure Test (125°C)        | Pass          |          | IEC 60695-10-2  |
| CLTE - Flow (23 to 80°C)          | 6.7E-5        | cm/cm/°C | ISO 11359-2     |
| Electrical                        | Nominal Value |          | Test Method     |
| Dielectric Constant (1.10 GHz)    | 2.80          |          | Internal method |
| Dissipation Factor (1.10 GHz)     | 6.3E-3        |          | Internal method |
| Optical                           | Nominal Value | Unit     | Test Method     |
| Transmittance (2540 μm)           | 87.0          | %        | ASTM D1003      |
| Haze (2540 μm)                    | 0.40          | %        | ASTM D1003      |
| Injection                         | Nominal Value | Unit     |                 |
| Drying Temperature                | 120           | °C       |                 |
| Drying Time                       | 2.0 - 4.0     | hr       |                 |
| Suggested Max Moisture            | 0.020         | %        |                 |
| Hopper Temperature                | 60.0 - 80.0   | °C       |                 |
| Rear Temperature                  | 260 - 280     | °C       |                 |
| Middle Temperature                | 270 - 290     | °C       |                 |
| Front Temperature                 | 280 - 310     | °C       |                 |
| Nozzle Temperature                | 270 - 290     | °C       |                 |
| Processing (Melt) Temp            | 280 - 310     | °C       |                 |
| Mold Temperature                  | 80.0 - 110    | °C       |                 |
| NOTE                              |               |          |                 |
| 1.                                | 2.0 mm/min    |          |                 |

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