

## Iupilon™ CLS400

Mitsubishi Engineering-Plastics Corp - Polycarbonate

| General Information                                                        |                  |                        |                 |
|----------------------------------------------------------------------------|------------------|------------------------|-----------------|
| <b>Product Description</b>                                                 |                  |                        |                 |
| For Lens of glasses, UV cut off <400 nm (2 mm), High Viscosity, Sunglasses |                  |                        |                 |
| <b>General</b>                                                             |                  |                        |                 |
| Features                                                                   | • High Viscosity | • UV Absorbing         |                 |
| Uses                                                                       | • Lenses         |                        |                 |
| ASTM & ISO Properties <sup>1</sup>                                         |                  |                        |                 |
| Physical                                                                   | Nominal Value    | Unit                   | Test Method     |
| Density                                                                    | 1.20             | g/cm <sup>3</sup>      | ISO 1183        |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)                                   | 8.0              | g/10 min               | ISO 1133        |
| Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)                                 | 7.5              | cm <sup>3</sup> /10min | ISO 1133        |
| Molding Shrinkage                                                          |                  |                        | Internal Method |
| Across Flow                                                                | 0.50 to 0.70     | %                      |                 |
| Flow                                                                       | 0.50 to 0.70     | %                      |                 |
| Water Absorption (Saturation, 23°C)                                        | 0.24             | %                      | ISO 62          |
| Mechanical                                                                 | Nominal Value    | Unit                   | Test Method     |
| Tensile Modulus                                                            | 2400             | MPa                    | ISO 527-1/1     |
| Tensile Stress (Yield)                                                     | 60.0             | MPa                    | ISO 527-2/50    |
| Tensile Strain                                                             |                  |                        | ISO 527-2/50    |
| Yield                                                                      | 5.5              | %                      |                 |
| Break                                                                      | 110              | %                      |                 |
| Flexural Modulus <sup>2</sup>                                              | 2300             | MPa                    | ISO 178         |
| Flexural Stress <sup>2</sup>                                               | 93.0             | MPa                    | ISO 178         |
| Impact                                                                     | Nominal Value    | Unit                   | Test Method     |
| Charpy Notched Impact Strength (23°C)                                      | 84               | kJ/m <sup>2</sup>      | ISO 179         |
| Charpy Unnotched Impact Strength (23°C)                                    | No Break         |                        | ISO 179         |
| Thermal                                                                    | Nominal Value    | Unit                   | Test Method     |
| Deflection Temperature Under Load                                          |                  |                        |                 |
| 0.45 MPa, Unannealed                                                       | 145              | °C                     | ISO 75-2/B      |
| 1.8 MPa, Unannealed                                                        | 131              | °C                     | ISO 75-2/A      |
| CLTE                                                                       |                  |                        | ISO 11359-2     |
| Flow                                                                       | 6.5E-5           | cm/cm/°C               |                 |
| Transverse                                                                 | 6.6E-5           | cm/cm/°C               |                 |
| Electrical                                                                 | Nominal Value    | Unit                   | Test Method     |
| Surface Resistivity                                                        | 6.0E+15          | ohms                   | IEC 60093       |
| Volume Resistivity                                                         | 3.0E+16          | ohms·cm                | IEC 60093       |
| Electric Strength                                                          |                  |                        | IEC 60243-1     |
| 1.00 mm                                                                    | 31               | kV/mm                  |                 |
| 3.00 mm                                                                    | 18               | kV/mm                  |                 |



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| Electrical          | Nominal Value | Unit | Test Method |
|---------------------|---------------|------|-------------|
| Dielectric Constant |               |      | IEC 60250   |
| 1 MHz               | 3.10          |      |             |
| 100 MHz             | 3.10          |      |             |
| Dissipation Factor  |               |      | IEC 60250   |
| 1 MHz               | 9.0E-3        |      |             |
| 100 MHz             | 6.0E-4        |      |             |

| Processing Information             |               |      |
|------------------------------------|---------------|------|
| Injection                          | Nominal Value | Unit |
| Drying Temperature - Hot Air Dryer | 120           | °C   |
| Drying Time - Hot Air Dryer        | 4.0 to 8.0    | hr   |
| Rear Temperature                   | 270 to 300    | °C   |
| Middle Temperature                 | 270 to 300    | °C   |
| Front Temperature                  | 270 to 300    | °C   |
| Nozzle Temperature                 | 270 to 300    | °C   |
| Mold Temperature                   | 80 to 120     | °C   |

