

# Lumiplas® LD590

Methyl Methacrylate / ABS

LG Chem Ltd.

Message:

Description  
Light diffusion, Medium Impact  
Application  
(LED) Lamp Cover, Signboard, Lighting Decoration of Electronic Device

| General Information |                          |  |  |
|---------------------|--------------------------|--|--|
| UL YellowCard       | E67171-100035327         |  |  |
| Features            | Medium impact resistance |  |  |
| Uses                | Electrical components    |  |  |
| Processing Method   | Extrusion                |  |  |
|                     | Injection molding        |  |  |

| Physical                                  | Nominal Value | Unit              | Test Method |
|-------------------------------------------|---------------|-------------------|-------------|
| Specific Gravity                          | 1.12          | g/cm <sup>3</sup> | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (220°C/10.0 kg) | 9.0           | g/10 min          | ASTM D1238  |
| Molding Shrinkage - Flow (3.20 mm)        | 0.40 - 0.70   | %                 | ASTM D955   |

| Hardness                    | Nominal Value | Unit | Test Method |
|-----------------------------|---------------|------|-------------|
| Rockwell Hardness (R-Scale) | 115           |      | ASTM D785   |

| Mechanical                                       | Nominal Value | Unit | Test Method |
|--------------------------------------------------|---------------|------|-------------|
| Tensile Strength <sup>1</sup> (Break, 3.20 mm)   | 53.9          | MPa  | ASTM D638   |
| Tensile Elongation <sup>2</sup> (Break, 3.20 mm) | 20            | %    | ASTM D638   |
| Flexural Modulus <sup>3</sup> (6.40 mm)          | 2750          | MPa  | ASTM D790   |
| Flexural Strength <sup>4</sup> (Yield, 6.40 mm)  | 88.3          | MPa  | ASTM D790   |

| Impact              | Nominal Value | Unit | Test Method |
|---------------------|---------------|------|-------------|
| Notched Izod Impact |               |      | ASTM D256   |
| 23°C, 3.20 mm       | 64            | J/m  | ASTM D256   |
| 23°C, 6.40 mm       | 59            | J/m  | ASTM D256   |

| Thermal                                                                        | Nominal Value | Unit     | Test Method |
|--------------------------------------------------------------------------------|---------------|----------|-------------|
| Deflection Temperature Under Load <sup>5</sup> (0.45 MPa, Unannealed, 6.40 mm) | 84.0          | °C       | ASTM D648   |
| CLTE - Flow                                                                    | 8.4E-5        | cm/cm/°C | ASTM D696   |
| RTI Elec                                                                       | 50.0          | °C       | UL 746      |
| RTI Imp                                                                        | 50.0          | °C       | UL 746      |
| RTI                                                                            | 50.0          | °C       | UL 746      |

| Flammability | Nominal Value | Test Method |
|--------------|---------------|-------------|
| Flame Rating | HB            | UL 94       |

| Injection | Nominal Value | Unit |
|-----------|---------------|------|
|-----------|---------------|------|

|                        |              |     |
|------------------------|--------------|-----|
| Drying Temperature     | 70.0 - 80.0  | °C  |
| Drying Time            | 3.0 - 4.0    | hr  |
| Suggested Max Moisture | < 0.010      | %   |
| Rear Temperature       | 190 - 210    | °C  |
| Middle Temperature     | 200 - 220    | °C  |
| Front Temperature      | 220 - 250    | °C  |
| Nozzle Temperature     | 230 - 250    | °C  |
| Processing (Melt) Temp | 230 - 250    | °C  |
| Mold Temperature       | 40.0 - 60.0  | °C  |
| Back Pressure          | 0.981 - 3.92 | MPa |
| Screw Speed            | 30 - 60      | rpm |

| Extrusion              | Nominal Value | Unit |
|------------------------|---------------|------|
| Drying Temperature     | 70.0 - 80.0   | °C   |
| Drying Time            | 3.0 - 4.0     | hr   |
| Suggested Max Moisture | < 0.010       | %    |
| Cylinder Zone 1 Temp.  | 190 - 210     | °C   |
| Cylinder Zone 2 Temp.  | 200 - 230     | °C   |
| Cylinder Zone 3 Temp.  | 210 - 240     | °C   |
| Cylinder Zone 4 Temp.  | 220 - 250     | °C   |
| Adapter Temperature    | 220 - 250     | °C   |
| Melt Temperature       | 230 - 250     | °C   |
| Die Temperature        | 220 - 250     | °C   |

#### Extrusion instructions

RollStack Temperature: 60 to 100°C RollStack Temperature: 70 to 90°C RollStack Temperature: 60 to 80°C

#### NOTE

1. 50 mm/min
2. 50 mm/min
3. 15 mm/min
4. 15 mm/min
5. 18.6kg

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