

# LNP™ THERMOCOMP™ D251 compound

Polycarbonate

SABIC Innovative Plastics Asia Pacific

## Message:

LNP\* Thermocomp\* D251 (experimental grade name as EXTC8273) is a compound based on Polycarbonate resin containing Glass Fiber, Flame Retardant. Added features of this material include: High modulus, good flatness, good ductility, Non-Brominated & Non-Chlorinated Flame Retardant.

| General Information         |                   |                        |             |
|-----------------------------|-------------------|------------------------|-------------|
| Filler / Reinforcement      | Glass Fiber       |                        |             |
| Features                    | Bromine Free      |                        |             |
|                             | Chlorine Free     |                        |             |
|                             | Ductile           |                        |             |
|                             | Flame Retardant   |                        |             |
| Processing Method           | Injection Molding |                        |             |
| Physical                    | Nominal Value     | Unit                   | Test Method |
| Density                     | 1.35              | g/cm <sup>3</sup>      | ASTM D792   |
| Melt Mass-Flow Rate (MFR)   |                   |                        | ASTM D1238  |
| 300°C/1.2 kg                | 17                | g/10 min               |             |
| 300°C/2.16 kg               | 33                | g/10 min               |             |
| Melt Volume-Flow Rate (MVR) |                   |                        | ISO 1133    |
| 300°C/1.2 kg                | 15.0              | cm <sup>3</sup> /10min |             |
| 300°C/2.16 kg               | 29.0              | cm <sup>3</sup> /10min |             |
| Molding Shrinkage           |                   |                        | ASTM D955   |
| Flow : 24 hr                | 0.20 to 0.40      | %                      |             |
| Across Flow : 24 hr         | 0.20 to 0.40      | %                      |             |
| Water Absorption            |                   |                        | ISO 62      |
| Saturation, 23°C            | 0.070             | %                      |             |
| Equilibrium, 23°C, 50% RH   | 0.030             | %                      |             |
| Mechanical                  | Nominal Value     | Unit                   | Test Method |
| Tensile Modulus             |                   |                        |             |
| -- <sup>1</sup>             | 6680              | MPa                    | ASTM D638   |
| --                          | 6800              | MPa                    | ISO 527-2/1 |
| Tensile Strength            |                   |                        |             |
| Break <sup>2</sup>          | 110               | MPa                    | ASTM D638   |
| Break                       | 112               | MPa                    | ISO 527-2/5 |
| Tensile Elongation          |                   |                        |             |
| Break <sup>3</sup>          | 2.7               | %                      | ASTM D638   |
| Break                       | 2.6               | %                      | ISO 527-2/5 |
| Flexural Modulus            |                   |                        |             |

|                                                      |               |                   |                 |
|------------------------------------------------------|---------------|-------------------|-----------------|
| 50.0 mm Span <sup>4</sup>                            | 6150          | MPa               | ASTM D790       |
| -- <sup>5</sup>                                      | 6240          | MPa               | ISO 178         |
| Flexural Stress                                      |               |                   |                 |
| --                                                   | 165           | MPa               | ISO 178         |
| Break, 50.0 mm Span <sup>6</sup>                     | 167           | MPa               | ASTM D790       |
| Impact                                               | Nominal Value | Unit              | Test Method     |
| Charpy Notched Impact Strength <sup>7</sup> (23°C)   | 14            | kJ/m <sup>2</sup> | ISO 179/1eA     |
| Charpy Unnotched Impact Strength <sup>8</sup> (23°C) | 51            | kJ/m <sup>2</sup> | ISO 179/1eU     |
| Notched Izod Impact (23°C)                           | 150           | J/m               | ASTM D256       |
| Unnotched Izod Impact (23°C)                         | 720           | J/m               | ASTM D4812      |
| Instrumented Dart Impact (23°C, Energy at Peak Load) | 22.0          | J                 | ASTM D3763      |
| Thermal                                              | Nominal Value | Unit              | Test Method     |
| Deflection Temperature Under Load                    |               |                   | ASTM D648       |
| 0.45 MPa, Unannealed, 3.20 mm                        | 121           | °C                |                 |
| 1.8 MPa, Unannealed, 3.20 mm                         | 116           | °C                |                 |
| CLTE                                                 |               |                   | ISO 11359-2     |
| Flow : 23 to 80°C                                    | 2.6E-5        | cm/cm/°C          |                 |
| Transverse : 23 to 80°C                              | 7.3E-5        | cm/cm/°C          |                 |
| Electrical                                           | Nominal Value |                   | Test Method     |
| Dielectric Constant                                  |               |                   | Internal Method |
| 1.10 GHz                                             | 3.20          |                   |                 |
| 1.90 GHz                                             | 3.20          |                   |                 |
| 5.00 GHz                                             | 3.20          |                   |                 |
| 10.0 GHz                                             | 3.20          |                   |                 |
| 20.0 GHz                                             | 3.20          |                   |                 |
| Dissipation Factor                                   |               |                   | Internal Method |
| 1.10 GHz                                             | 6.3E-3        |                   |                 |
| 1.90 GHz                                             | 6.3E-3        |                   |                 |
| 5.00 GHz                                             | 6.4E-3        |                   |                 |
| 10.0 GHz                                             | 6.7E-3        |                   |                 |
| 20.0 GHz                                             | 6.5E-3        |                   |                 |
| Flammability                                         | Nominal Value |                   | Test Method     |
| Flame Rating                                         |               |                   | UL 94           |
| 0.300 mm                                             | V-2           |                   |                 |
| 0.500 mm                                             | V-1           |                   |                 |
| 0.600 mm                                             | V-0           |                   |                 |
| Injection                                            | Nominal Value | Unit              |                 |
| Drying Temperature                                   | 110           | °C                |                 |
| Drying Time                                          | 3.0 to 6.0    | hr                |                 |
| Suggested Max Moisture                               | 0.020         | %                 |                 |
| Rear Temperature                                     | 260 to 280    | °C                |                 |

|                        |                |     |
|------------------------|----------------|-----|
| Middle Temperature     | 270 to 290     | °C  |
| Front Temperature      | 280 to 300     | °C  |
| Nozzle Temperature     | 285 to 305     | °C  |
| Processing (Melt) Temp | 285 to 310     | °C  |
| Mold Temperature       | 80.0 to 110    | °C  |
| Back Pressure          | 0.100 to 0.300 | MPa |
| Screw Speed            | 50 to 90       | rpm |

#### NOTE

|    |                    |
|----|--------------------|
| 1. | 5.0 mm/min         |
| 2. | Type I, 5.0 mm/min |
| 3. | Type I, 5.0 mm/min |
| 4. | 1.3 mm/min         |
| 5. | 2.0 mm/min         |
| 6. | 1.3 mm/min         |
| 7. | 80*10*4 sp=62mm    |
| 8. | 80*10*4 sp=62mm    |

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