

Technical Data Sheet

# Duragrip DGR 6160BK

Thermoplastic Elastomer  
LyondellBasell Industries  
Engineering Plastics

**Product Description**

DuraGrip® 6160BK is designed to be a special purpose Melt Processible Elastomer (MPE) that is easy to use in injection molding and extrusion processes. DGR 6160BK has an excellent soft touch feel and will Bond to Nylon, ABS, PC, PC/ABS. DuraGrip® 6100 series is hygroscopic and requires drying prior to use.

**General**

|                   |                                 |
|-------------------|---------------------------------|
| Features          | • Good Adhesion                 |
| Agency Ratings    | • EU 2002/96/EC (WEEE)          |
| RoHS Compliance   | • RoHS Compliant                |
| Forms             | • Pellets                       |
| Processing Method | • Extrusion • Injection Molding |

| Physical                                 | Nominal Value (English) | Nominal Value (SI)     | Test Method           |
|--|-------------------------|------------------------|-----------------------|
| Density / Specific Gravity               |                         |                        |                       |
| --                                       | 1.07                    | 1.07 g/cm <sup>3</sup> | ASTM D792             |
| --                                       | 1.07 g/cm <sup>3</sup>  | 1.07 g/cm <sup>3</sup> | ISO 1183              |
| Mechanical                               | Nominal Value (English) | Nominal Value (SI)     | Test Method           |
| Taber Abrasion Resistance                |                         |                        | ASTM D1044            |
| 1000 Cycles, 1.0e+6 G, Cs-17 Wheel       | 189 mg                  | 189 mg                 |                       |
| Elastomers                               | Nominal Value (English) | Nominal Value (SI)     | Test Method           |
| Tensile Set (100% Strain)                | 4 %                     | 4 %                    | ASTM D412             |
| Tensile Stress                           |                         |                        |                       |
| 100% Strain                              | 320 psi                 | 2.21 MPa               | ASTM D412             |
| 100% Strain, 73°F (23°C)                 | 320 psi                 | 2.21 MPa               | ISO 37                |
| Tensile Strength (Yield, 73°F (23°C))    | 960 psi                 | 6.62 MPa               | ASTM D412<br>ISO 37   |
| Tensile Elongation                       |                         |                        |                       |
| Break                                    | 350 %                   | 350 %                  | ASTM D412             |
| Break, 73°F (23°C)                       | 350 %                   | 350 %                  | ISO 37                |
| Tear Strength <sup>1</sup> (75°F (24°C)) | 168 lbf/in              | 29.4 kN/m              | ASTM D624             |
| Compression Set                          |                         |                        | ASTM D395B<br>ISO 815 |
| 75°F (24°C), 22 Hr                       | 21 %                    | 21 %                   |                       |
| 158°F (70°C), 22 Hr                      | 82 %                    | 82 %                   |                       |
| 212°F (100°C), 22 Hr                     | 91 %                    | 91 %                   |                       |
| Hardness                                 | Nominal Value (English) | Nominal Value (SI)     | Test Method           |
| Durometer Hardness (Shore A, 5 Sec)      | 58                      | 58                     | ASTM D2240<br>ISO 868 |
| Thermal                                  | Nominal Value (English) | Nominal Value (SI)     | Test Method           |
| Brittleness Temperature                  | -85.0 °F                | -65.0 °C               | ASTM D746<br>ISO 812  |

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| Aging  | Nominal Value (English) | Nominal Value (SI) | Test Method           |
|--|-------------------------|--------------------|-----------------------|
| Change in Tensile Strength in Air                      |                         |                    |                       |
| 158°F (70°C), 168 Hr                                   | 11 %                    | 11 %               | ASTM D573<br>ISO 188  |
| 100% Strain, 158°F (70°C), 168 Hr                      | 2.0 %                   | 2.0 %              | ASTM D573             |
| 212°F (100°C), 168 Hr                                  | 40 %                    | 40 %               | ASTM D573<br>ISO 188  |
| 100% Strain, 212°F (100°C), 168 Hr                     | -5.0 %                  | -5.0 %             | ASTM D573             |
| 100% Strain 158°F (70°C), 168 Hr                       | 2.0 %                   | 2.0 %              | ISO 188               |
| 100% Strain 212°F (100°C), 168 Hr                      | -5.0 %                  | -5.0 %             | ISO 188               |
| Change in Ultimate Elongation in Air                   |                         |                    |                       |
| 158°F (70°C), 168 Hr                                   | 4.0 %                   | 4.0 %              | ASTM D573             |
| 212°F (100°C), 168 Hr                                  | 18 %                    | 18 %               |                       |
| Change in Tensile Strain at Break                      |                         |                    |                       |
| 158°F (70°C), 168 Hr                                   | 4.0 %                   | 4.0 %              | ISO 1817              |
| 212°F (100°C), 168 Hr                                  | 18 %                    | 18 %               |                       |
| Change in Volume                                       |                         |                    |                       |
| 75°F (24°C), 168 Hr, In Reference Fuel B               | 52 %                    | 52 %               | ASTM D471<br>ISO 1817 |
| 158°F (70°C), 168 Hr, In Astm #1 Oil                   | 12 %                    | 12 %               |                       |
| 158°F (70°C), 168 Hr, In Irm 903 Oil                   | 74 %                    | 74 %               |                       |
| 158°F (70°C), 168 Hr, In Water                         | 2.0 %                   | 2.0 %              |                       |
| Fill Analysis  | Nominal Value (English) | Nominal Value (SI) | Test Method           |
| Melt Viscosity (374°F (190°C), 300 Sec <sup>-1</sup> ) | 354 Pa·s                | 354 Pa·s           | ASTM D3835            |

### Additional Information

The value listed as Density -Specific Gravity, ASTM D792, was tested in accordance with ASTM D471.

The value listed as Density, ISO 1183, was tested in accordance with ISO 2781.

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| Injection              | Nominal Value (English) | Nominal Value (SI) |
|------------------------|-------------------------|--------------------|
| Drying Temperature     | 150 °F                  | 66 °C              |
| Drying Time            | 3.0 hr                  | 3.0 hr             |
| Rear Temperature       | 400 to 430 °F           | 204 to 221 °C      |
| Middle Temperature     | 420 to 440 °F           | 216 to 227 °C      |
| Front Temperature      | 440 to 460 °F           | 227 to 238 °C      |
| Nozzle Temperature     | 440 to 480 °F           | 227 to 249 °C      |
| Processing (Melt) Temp | 440 to 490 °F           | 227 to 254 °C      |
| Mold Temperature       | 110 to 130 °F           | 43 to 54 °C        |
| Injection Pressure     | 400 to 800 psi          | 2.76 to 5.52 MPa   |
| Screw Speed            | 50 to 150 rpm           | 50 to 150 rpm      |

### Injection Notes

DuraGrip® is not hygroscopic, under normal conditions does not require drying. Dry in a desiccant dryer if porosity is observed.

Injection Speed: 1 to 3 in<sup>3</sup>/sec

Injection Time (1st Stage/Boost): 0.5 to 4 sec

Second Stage Pressure: 300 to 500 psi

Second Stage Time: 3 to 10 sec

Cooling Time: 10 to 25 sec

Back Pressure: 25 to 75 %