Blow Molding Guide Polyolefins
Braskem Europe
Braskem targets development partnerships with our clients that enable them to meet and exceed evolving and stringent market demands.

Polyolefin resins can be used for blow molding processing. Some of the potential applications that blow molding resins can be used for include:

- Small part blow moulded bottles e.g. personal care
- Cans
- Blow moulded containers
- Industrial bulk containers

Benefits in these applications are light weight, low energy consumption and efficient processability therefore reduce costs. Further benefits are outstanding chemical resistance, good stiffness/toughness balance and high melt strength.

### Applications

- **Transparent bottles up to 500 ml**
  - DR155.01
- **Transparent bottles up to 2 L**
  - DR7051.01
- **Containers from 0.2 L to 5 L**
  - HDB0763
  - H5502
  - Inspire 137
  - SGF 4950
  - SGF 4960
  - SGD 4960
- **Containers from 5 L to 20 L**
  - HDB055
  - HDB0358
  - GF4950 HS
- **Containers from 20 L to 220 L**
  - HDB6050
- **IBC’s 1000 L**
  - HDB6050U1
- **Industrial containers**
  - Food/Beverages
  - Household
  - Industrial Chemical (HIC)
  - Personal Care
  - Automotive
  - Agrochemical
## PE - Performance and Portfolio

### Performance

<table>
<thead>
<tr>
<th>Grade</th>
<th>Density</th>
<th>High Load Melt Index 190°C, 21.6 kg</th>
<th>Flexural Modulus; Secant 1% Method</th>
<th>Strength at yield</th>
<th>Notched Izod @ 23°C</th>
<th>ESCR 100 % Igepal, 50°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ASTM METHOD</td>
<td>Units</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D 792</td>
<td>[kg/m³]</td>
<td>D 1238</td>
<td>D 790</td>
<td>D 638</td>
<td>D 256</td>
</tr>
</tbody>
</table>

### Portfolio

- **HS5010**
  - Density: 948 [kg/m³]
  - Melt Index: 10 [g/10min]
  - Flexural Modulus: 1150 [MPa]
  - Strength at yield: 25 [MPa]
  - Notched Izod @ 23°C: 500 [J/m]
  - ESCR 100 % Igepal, 50°C: >1000 [h]
  - Low temperature impact resistance

- **HDB6050U1**
  - Density: 948 [kg/m³]
  - Melt Index: 6 [g/10min]
  - Flexural Modulus: 1133 [MPa]
  - Strength at yield: 26 [MPa]
  - Notched Izod @ 23°C: 500 [J/m]
  - ESCR 100 % Igepal, 50°C: >1000 [h]
  - Excellent processability, outstanding ESCR, UV stabilized

- **HDB6050**
  - Density: 950 [kg/m³]
  - Melt Index: 5 [g/10min]
  - Flexural Modulus: 1240 [MPa]
  - Strength at yield: 28 [MPa]
  - Notched Izod @ 23°C: 500 [J/m]
  - ESCR 100 % Igepal, 50°C: >1000 [h]
  - Excellent processability, outstanding ESCR

- **HS5502**
  - Density: 954 [kg/m³]
  - Melt Index: 32 [g/10min]
  - Flexural Modulus: 1350 [MPa]
  - Strength at yield: 30 [MPa]
  - Notched Izod @ 23°C: 250 [J/m]
  - ESCR 100 % Igepal, 50°C: 20 [h]
  - Good processability, bottles produced have excellent stiffness

- **HDB0355**
  - Density: 955 [kg/m³]
  - Melt Index: 32 [g/10min]
  - Flexural Modulus: 1408 [MPa]
  - Strength at yield: 30 [MPa]
  - Notched Izod @ 23°C: 0.16 [J/m]
  - ESCR 100 % Igepal, 50°C: 36 [h]
  - Offers good combination of high top load strenght and ESCR

- **GF4950**
  - Density: 956 [kg/m³]
  - Melt Index: 28 [g/10min]
  - Flexural Modulus: 1350 [MPa]
  - Strength at yield: 30 [MPa]
  - Notched Izod @ 23°C: 150 [J/m]
  - ESCR 100 % Igepal, 50°C: 70 [h]
  - Bimodal grade, good balance between impact and stiffness

- **HDB0358**
  - Density: 958 [kg/m³]
  - Melt Index: 26 [g/10min]
  - Flexural Modulus: 1500 [MPa]
  - Strength at yield: 30 [MPa]
  - Notched Izod @ 23°C: 140 [J/m]
  - ESCR 100 % Igepal, 50°C: 1400 [h]
  - Bimodal grade, outstanding stiffness and ESCR

- **HDB0763**
  - Density: 963 [kg/m³]
  - Melt Index: 55 [g/10min]
  - Flexural Modulus: 1661 [MPa]
  - Strength at yield: 33 [MPa]
  - Notched Izod @ 23°C: 105 [J/m]
  - ESCR 100 % Igepal, 50°C: 11 [h]
  - Extremely low odor in finished container
Green PE – Performance and Portfolio

### Performance

<table>
<thead>
<tr>
<th>Grade</th>
<th>Density</th>
<th>High Load Melt Index 190°C; 21.6 kg</th>
<th>Flexural Modulus; Secant 1% Method</th>
<th>Strength at yield</th>
<th>Notched Izod @ 23 °C</th>
<th>ESCR 100% Igepal, 50 °C</th>
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</thead>
<tbody>
<tr>
<td>ASTM METHOD</td>
<td>Units</td>
<td>[kg/m³]</td>
<td>[g/10min]</td>
<td>[MPa]</td>
<td>[MPa]</td>
<td>[J/m]</td>
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</table>

Low temperature impact resistance

Excellent processability, outstanding ESCR, UV stabilized

Good processability, bottles produced have excellent stiffness

Excellent processability, outstanding ESCR

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### Portfolio

- **SGD4960**
- **SGF4950**
- **SGF4960**
- **SGF4950HS**
# PP – Performance and Portfolio

## Performance

<table>
<thead>
<tr>
<th>Grade</th>
<th>MFR (g/10min)</th>
<th>Density (kg/m³)</th>
<th>Flexural Modulus (ISO 1133)</th>
<th>Tensile Stress (ISO 178)</th>
<th>Tensile Strain (ISO 527-2)</th>
<th>Charpy Notched Impact Strength (23 °C) ISO 179-1/1eA</th>
<th>Charpy Notched Impact Strength (~20 °C) ISO 179-1/1eA</th>
<th>Heat Deflection Temperature—under load 0,45 MPa ISO 75-2/B</th>
<th>Haze (30.4) mil (1000 μm) ASTM D1003</th>
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</thead>
<tbody>
<tr>
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<td>0.8</td>
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<td>12</td>
<td>6</td>
<td>-</td>
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</tbody>
</table>

**Inspire 137**
High impact performance, also at minus temperatures

**DR155.01**
Good processing, excellent mechanical property balance and high clarity

**DR7051.01**
A random copolymer for injection stretch blow molding applications. Good mechanical property balance, excellent optical properties, good processability

## Portfolio

- **Inspire 137**
- **DR155.01**
- **DR7051.01 (ISBM)**

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