

# DEXFLEX® 756-68

## Thermoplastic Polyolefin Elastomer

LyondellBasell Advanced Polyolefins USA, Inc.

### Product Description

DEXFLEX® 756-68 thermoplastic polyolefin (TPO) is designed for automotive air bag covers. This material has been designed for low temperature air bag deployment with a balance of stiffness and ductility. The material is typically black for painted or non-visible applications. The product is also available in natural, or color matched to automotive OEM interior colors with UV stabilization for mold-in-color applications.

#### Applications:

DEXFLEX® 756-68 thermoplastic polyolefin is intended for use in automotive airbag door applications, either in driver, passenger, or side airbag modules. The typical service temperature range is from -40°C to 100°C. For mold-in-color applications, low gloss appearance can be achieved with most interior grain patterns.

### General

|            |                               |                                     |                            |
|------------|-------------------------------|-------------------------------------|----------------------------|
| Additive   | • UV Stabilizer               |                                     |                            |
| Features   | • Ductile<br>• Good Stiffness | • Good UV Resistance<br>• Low Gloss |                            |
| Uses       | • Automotive Applications     | • Automotive Interior Parts         | • Automotive Interior Trim |
| Appearance | • Black                       | • Colors Available                  |                            |
| Forms      | • Pellets                     |                                     |                            |

| Physical                                  | Nominal Value | Unit              | Test Method            |
|-------------------------------------------|---------------|-------------------|------------------------|
| Density                                   | 0.888         | g/cm <sup>3</sup> | ISO 1183               |
| Melt Mass-Flow Rate (MFR) (230°C/2.16 kg) | 4.0           | g/10 min          | ISO 1133               |
| Molding Shrinkage - Flow                  |               |                   | ASTM D955<br>ISO 294-4 |
| --                                        | 0.60 to 0.90  | %                 |                        |
| 80°C, 48 hr                               | 0.80 to 1.1   | %                 |                        |
| Ash Content                               |               |                   |                        |
| --                                        | < 1.0         | wt%               | ISO 3451               |
| --                                        | < 1.0         | wt%               | ASTM D5630             |

| Mechanical                                     | Nominal Value | Unit | Test Method  |
|------------------------------------------------|---------------|------|--------------|
| Tensile Modulus                                | 400           | MPa  | ISO 527-2/50 |
| Tensile Stress                                 |               |      | ISO 527-2/50 |
| Yield                                          | 9.00          | MPa  |              |
| Break                                          | 13.0          | MPa  |              |
| Tensile Strain                                 |               |      | ISO 527-2/50 |
| Yield                                          | 50            | %    |              |
| Break                                          | > 400         | %    |              |
| Flexural Modulus <sup>2</sup> (23°C, 4.00 mm)  | 350           | MPa  | ISO 178      |
| Flexural Strength <sup>2</sup> (23°C, 4.00 mm) | 9.00          | MPa  | ISO 178      |
| Scratch Resistance <sup>3</sup>                | 5 to 7        | N    |              |

| Impact                                    | Nominal Value | Unit              | Test Method |
|-------------------------------------------|---------------|-------------------|-------------|
| Charpy Notched Impact Strength            |               |                   | ISO 179/1eA |
| -40°C                                     | 95            | kJ/m <sup>2</sup> |             |
| 23°C                                      | 60            | kJ/m <sup>2</sup> |             |
| Notched Izod Impact Strength <sup>4</sup> |               |                   | ISO 180/1A  |
| -40°C                                     | 90.0          | kJ/m <sup>2</sup> |             |
| 23°C                                      | 50.0          | kJ/m <sup>2</sup> |             |
| Instrumented Dart Impact <sup>5</sup>     |               |                   | ASTM D3763  |
| -40°C, Max Load                           | 25.0          | J                 |             |
| 0°C, Max Load                             | 23.0          | J                 |             |
| 23°C, Max Load                            | 18.0          | J                 |             |

| Hardness                         | Nominal Value | Unit | Test Method |
|----------------------------------|---------------|------|-------------|
| Shore Hardness (Shore D, 15 sec) | 43            |      | ISO 868     |

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| Thermal                          | Nominal Value | Unit     | Test Method            |
|----------------------------------|---------------|----------|------------------------|
| Heat Deflection Temperature      |               |          |                        |
| 0.45 MPa, Unannealed             | 58.0          | °C       | ISO 75-2/B             |
| 1.8 MPa, Unannealed              | 44.0          | °C       | ISO 75-2/A             |
| Melting Temperature <sup>6</sup> | 160           | °C       | ASTM D3418<br>ISO 3146 |
| CLTE                             |               |          | ASTM D696              |
| Flow: -30 to 80°C                | 0.00016       | cm/cm/°C |                        |
| Transverse: -30 to 80°C          | 0.00011       | cm/cm/°C |                        |
| Service Temperature              | -40 to 100    | °C       | Internal Method        |

| Flammability                             | Nominal Value | Unit   | Test Method |
|------------------------------------------|---------------|--------|-------------|
| Burning Rate                             |               |        |             |
| --                                       | < 100         | mm/min | SAE J369    |
| --                                       | < 100         | mm/min | FMVSS 302   |
| --                                       | < 100         | mm/min | ISO 3795    |
| Fogging (95°C, 6 hr, photometric method) | 95            | %      | SAE J1756   |

| Injection              | Nominal Value | Unit |
|------------------------|---------------|------|
| Drying Temperature     | 50.0 to 80.0  | °C   |
| Drying Time            | 2.0 to 6.0    | hr   |
| Suggested Max Moisture | 0.050         | %    |
| Rear Temperature       | 205           | °C   |
| Middle Temperature     | 210           | °C   |
| Front Temperature      | 215           | °C   |
| Nozzle Temperature     | 215           | °C   |
| Processing (Melt) Temp | 190 to 240    | °C   |
| Mold Temperature       | 30.0          | °C   |
| Injection Pressure     | 3.50 to 10.5  | MPa  |
| Back Pressure          | 0.350 to 2.00 | MPa  |
| Screw Speed            | 50 to 100     | rpm  |
| Cushion                | 6.00 to 13.0  | mm   |

| Injection Notes                                |
|------------------------------------------------|
| Hot Runner, Manifold, and Tips: 215°C          |
| Mold Temp, cavity: 30°C                        |
| Mold Temp, core: 24°C                          |
| Injection Pressure, First Stage: 35 to 105 bar |
| Injection Pressure, Second Stage: 25 to 70 bar |
| Injection Velocity: 10 to 80 mm/sec            |

**Notes**

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 2.0 mm/min

<sup>3</sup> GMN3943, FLTM BN 108-13 DCX LP-463DD-18-1

<sup>4</sup> Edgewise

<sup>5</sup> 6.70 m/sec

<sup>6</sup> 10°C/min