

# Alathon® M5350

High Density Polyethylene Copolymer  
LyondellBasell Industries

Message:

Alathon M5350 is a copolymer with a narrow molecular weight distribution. This resin provides high impact strength, excellent color, low odor and good processing stability. Typical applications include open head pails, large shipping containers and 55-gallon drum lids.

| General Information                       |                                      |                   |                 |
|-------------------------------------------|--------------------------------------|-------------------|-----------------|
| Features                                  | Copolymer                            |                   |                 |
|                                           | Food Contact Acceptable              |                   |                 |
|                                           | Good Processing Stability            |                   |                 |
|                                           | High ESCR (Stress Crack Resist.)     |                   |                 |
|                                           | High Impact Resistance               |                   |                 |
|                                           | Low to No Odor                       |                   |                 |
|                                           | Narrow Molecular Weight Distribution |                   |                 |
| Uses                                      | Containers                           |                   |                 |
|                                           | Drums                                |                   |                 |
|                                           | Lids                                 |                   |                 |
|                                           | Pails                                |                   |                 |
| Agency Ratings                            | FDA 21 CFR 177.1520                  |                   |                 |
| Forms                                     | Pellets                              |                   |                 |
| Processing Method                         | Injection Molding                    |                   |                 |
| Physical                                  | Nominal Value                        | Unit              | Test Method     |
| Density                                   | 0.953                                | g/cm <sup>3</sup> | ASTM D1505      |
| Apparent Density                          | 0.53 to 0.59                         | g/cm <sup>3</sup> | ASTM D1895      |
| Melt Mass-Flow Rate (MFR) (190°C/2.16 kg) | 4.5                                  | g/10 min          | ASTM D1238      |
| Spiral Flow                               | 20.6                                 | cm                | Internal Method |
| Mechanical                                | Nominal Value                        | Unit              | Test Method     |
| Tensile Modulus <sup>1</sup>              |                                      |                   | ASTM D638       |
| --                                        | 1020                                 | MPa               |                 |
| 1% Secant                                 | 808                                  | MPa               |                 |
| Tensile Strength <sup>2</sup>             |                                      |                   | ASTM D638       |
| Yield                                     | 28.0                                 | MPa               |                 |
| Break                                     | > 29.0                               | MPa               |                 |
| Tensile Elongation <sup>3</sup>           |                                      |                   | ASTM D638       |
| Yield                                     | 9.0                                  | %                 |                 |
| Break                                     | > 2000                               | %                 |                 |
| Flexural Modulus <sup>4</sup>             |                                      |                   | ASTM D790       |

| --                                                       | 1370               | MPa  |             |
|----------------------------------------------------------|--------------------|------|-------------|
| 1% Secant                                                | 1290               | MPa  |             |
| 2% Secant                                                | 1060               | MPa  |             |
| Impact                                                   | Nominal Value      | Unit | Test Method |
| Notched Izod Impact (23°C)                               | 44                 | J/m  | ASTM D256   |
| Unnotched Izod Impact (-18°C)                            | No Break           |      | ASTM D256   |
| Thermal                                                  | Nominal Value      | Unit | Test Method |
| Deflection Temperature Under Load (0.45 MPa, Unannealed) | 73.3               | °C   | ASTM D648   |
| Brittleness Temperature                                  | < -76.1            | °C   | ASTM D746   |
| Vicat Softening Temperature                              | 126                | °C   | ASTM D1525  |
| Peak Melting Temperature                                 | 131                | °C   | ASTM D3418  |
| Peak Crystallization Temperature (DSC)                   | 116                | °C   | ASTM D3418  |
| Injection                                                | Nominal Value      | Unit |             |
| Rear Temperature                                         | 232                | °C   |             |
| Middle Temperature                                       | 243                | °C   |             |
| Front Temperature                                        | 246                | °C   |             |
| Nozzle Temperature                                       | 246                | °C   |             |
| NOTE                                                     |                    |      |             |
| 1.                                                       | Type I, 50 mm/min  |      |             |
| 2.                                                       | Type IV, 50 mm/min |      |             |
| 3.                                                       | Type IV, 50 mm/min |      |             |
| 4.                                                       | 13 mm/min          |      |             |

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#### Recommended distributors for this material

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