

Alathon®
M5350
High Density Polyethylene
Injection Molding Grade
Melt Index 4.5 Density 0.953
Applications

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.

Regulatory Status

M5350 meets the requirements of the Food and Drug Administration regulation 21 CFR 177.1520. This regulation allows the use of this olefin polymer in "...articles or components of articles intended for use in contact with food." Specific limitations or conditions of use may apply. Contact your Equistar sales representative for more information.

Processing Techniques

Specific recommendations for processing M5350 can only be made when the processing conditions, equipment and end use application are known. For further information please contact your Equistar Sales Representative or refer to the [Start-up Conditions for HDPE](#) on the Equistar web site. Additional [Injection Molding Technical Topics](#) can also be found on the Equistar web site.

Suggested Start-up Conditions

| Extruder Zone | Rear | Center | Front | Nozzle |
|-------------------------------|-----------|-----------|-----------|-----------|
| Cylinder Temperature, °F (°C) | 450 (232) | 470 (243) | 475 (246) | 475 (246) |

Physical Properties

| Resin Properties | Nominal Values | | Test Method |
|---|--------------------------|---------------------------|--------------|
| | English Units | SI Units | |
| Melt Index, 190°C, 2.16 kg | | 4.5 g/10 min | ASTM D 1238 |
| Spiral Flow ¹ | 8.1 in | 20.6 [cm] | Equistar |
| Density | | 0.953 g/cc | ASTM D 1505 |
| Bulk Density | 33-37 lb/ft ³ | 529-593 kg/m ³ | ASTM D 1895 |
| Molded Properties | | | ASTM D 4796 |
| Tensile Stress, Yield | 4,060 psi | 28 MPa | ASTM D 638* |
| Elongation, Yield | | 9 % | ASTM D 638* |
| Tensile Stress, Break [†] | >4,200 psi | >28 MPa | ASTM D 638* |
| Elongation, Break | | >1,980 % | ASTM D 638* |
| Flexural Modulus, 1% Secant | 186,500 psi | 1,290 MPa | ASTM D 790** |
| Izod Impact, 23 °C | 0.82 ft-lbs/in | 44 J/m | ASTM D 256 |
| Unnotched Impact, -18 °C | No Break | No Break | ASTM D 4812 |
| Vicat Softening Point | 259.3 °F | 126.3 °C | ASTM D 1525 |
| Heat Deflection Temperature, 66 psi ² | 164 °F | 73.1 °C | ASTM D 648 |
| Low Temperature Brittleness, F ₅₀ ² | <-105 °F | <-76 °C | ASTM D 746 |

See Page 2 for Other Properties

[†] Specimens failed to break within testing limits.

¹ Measures the number of inches of flow produced when molten resin is injected into a long, spiral channel (0.0625" insert), at a constant injection pressure of 1000 psi with a melt temperature of 440°F.

² Data are for control and development work and not intended for use in design or predicting performance at elevated or sub-ambient temperatures.

* Conditions: 50 mm/min, Type IV

** Conditions: 12.5 mm/min

Alathon®

M5350

High Density Polyethylene
Injection Molding Grade

Melt Index 4.5 Density 0.953

Other
Properties

| | Nominal Values | | Test Method |
|-----------------------------|----------------------|-----------------|--------------------|
| | English Units | SI Units | |
| Thermal Properties | | | |
| Melting Temperature | 267.3 °F | 130.7 °C | ASTM D 3418 |
| Crystallization Temperature | 241.5 °F | 116.4 °C | ASTM D 3418 |
| Molded Properties | English Units | SI Units | Test Method |
| Flexural Modulus, 2% Secant | 154,100 psi | 1,060 MPa | ASTM D 4976 |
| Flexural Young's Modulus | 199,200 psi | 1,370 MPa | ASTM D 790** |
| Tensile Modulus, 1% Secant | 117,200 psi | 808 MPa | ASTM D 790** |
| Tensile Young's Modulus | 148,300 psi | 1,020 MPa | ASTM D 638*** |

** Conditions: 12.5 mm/min

*** Conditions: 50 mm/min, Type I

The information on this document is, to our knowledge, true and accurate. However, since the particular uses and the actual conditions of use of our products are beyond our control, establishing satisfactory performance of our products for the intended application is the customer's sole responsibility. All uses of Equistar products and any written or oral information, suggestions or technical advice from Equistar are without warranty, express or implied, and are not an inducement to use any process or product in conflict with any patent.

Equistar materials are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. Equistar makes no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues or fluids.

More detailed safety and disposal information on our products is contained in the Material Safety Data Sheet (MSDS). All users of our products are urged to retain and use the MSDS. A MSDS is automatically distributed upon purchase/order execution. You may request an advance or replacement copy by calling our MSDS Hotline at 800.700.0946.

® Alathon is a registered trademark of Equistar Chemicals, LP.



Lyondell Chemical Company
1221 McKinney, Suite 700
P.O. Box 2583
Houston, Texas 77252-2583
800.615.8999
<http://www.equistarchem.com>