

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 Lyondell web site. Additional [Injection Molding Technical Topics](#) can also be found on the Lyondell 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 <sup>1</sup>	8.1 in	20.6 (cm)	Equistar
Density		0.953 g/cc	ASTM D 1505
Bulk Density	33-37 lb/ft <sup>3</sup>	529-593 kg/m <sup>3</sup>	ASTM D 1895
<b>Molded Properties</b>			ASTM D 4796
Tensile Stress, Yield	4,060 psi	28 MPa	ASTM D 638*
Elongation, Yield		9 %	ASTM D 638*
Tensile Stress, Break <sup>†</sup>	>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 <sup>2</sup>	164 °F	73.1 °C	ASTM D 648
Low Temperature Brittleness, F <sub>50</sub> <sup>2</sup>	<-105 °F	< -76 °C	ASTM D 746

## See Page 2 for Other Properties

<sup>†</sup> Specimens failed to break within testing limits.

<sup>1</sup> 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.

<sup>2</sup> 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



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**Other  
Properties**

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

\*\* Conditions: 12.5 mm/min

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

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