

Alathon®

# M5372

High Density Polyethylene

Injection Molding Grade

Melt Index 6.9 Density 0.953

## Applications

ALATHON M5372 is a copolymer with narrow molecular weight distribution. This resin provides high impact strength and stress crack resistance, excellent color, low odor and good processing stability. Typical applications include open head pails and large shipping containers

## Regulatory Status

M5372 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 M5372 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

	Nominal Values		Test Method
	English Units	SI Units	
<b>Resin Properties</b>			
Melt Index, 190°C, 2.16 kg		6.9 g/10 min	ASTM D 1238
Spiral Flow <sup>1</sup>	8.8 in	22.4 [cm]	Equistar
Density		0.953 g/cc	ASTM D 1505
Bulk Density	37-39 lb/ft <sup>3</sup>	593-625 kg/m <sup>3</sup>	ASTM D 1895
<b>Molded Properties</b>			
Tensile Stress, Yield	3,950 psi	27.2 MPa	ASTM D 4796
Elongation, Yield		11 %	ASTM D 638*
Tensile Stress, Break	3,170 psi	21.9 MPa	ASTM D 638*
Elongation, Break		1,240 %	ASTM D 638*
Flexural Modulus, 1% Secant	172,000 psi	1,190 MPa	ASTM D 790**
Izod Impact, 23 °C	0.9 ft-lbs/in	48 J/m	ASTM D 256
Unnotched Impact, -18 °C	No Break	No Break	ASTM D 4812
Vicat Softening Point	261 °F	127 °C	ASTM D 1525
Hardness, Shore D		70	ASTM D 2240
Heat Deflection Temperature, 66 psi <sup>2</sup>	158 °F	70 °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>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  
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	Nominal Values		Test Method
	English Units	SI Units	
<b>Thermal Properties</b>			
Melting Temperature	268.2 °F	130.7 °C	ASTM D 3418
Crystallization Temperature	240.4 °F	115.8 °C	ASTM D 3418
<b>Molded Properties</b>	<b>English Units</b>	<b>SI Units</b>	<b>Test Method</b>
Flexural Modulus, 2% Secant	141,700 psi	977 MPa	ASTM D 4976
Flexural Young's Modulus	186,800 psi	1,290 MPa	ASTM D 790**
Tensile Modulus, 1% Secant	111,000 psi	765 MPa	ASTM D 790**
Tensile Young's Modulus	132,100 psi	911 MPa	ASTM D 638***

\*\* Conditions: 12.5 mm/min

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

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