

Alathon

M5370

High Density Polyethylene

Injection Molding Grade

Melt Index 6.9 Density 0.953



Applications

Alathon M5370 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 and large shipping containers.

Regulatory Status

M5370 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 Product Safety representative for more information.

Processing Techniques

Specific recommendations for processing M5370 can only be made when the processing conditions, equipment and end use are known.

Suggested Start-up Conditions

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

Typical Properties

Resin Properties	Nominal Values		Units	Test Method
	English Units	SI		
Melt Index, 190°C, 2.16 kg		6.9	g/10 min	ASTM D1238
Spiral Flow ¹	8.9 in	22.6	cm	Equistar
Density		0.953	g/cc	ASTM D1505
Bulk Density	33-37 lb/ft ³	529-593	kg/m ³	ASTM D1895
Molded Properties				
Tensile Stress, Yield	4,130 psi	28.5	MPa	ASTM D638*
Elongation, Yield		9	%	ASTM D638*
Tensile Stress, Break	2,990 psi	20.6	MPa	ASTM D638*
Elongation, Break		1,150	%	ASTM D638*
Flexural Modulus, 1% Secant	189,030 psi	1,300	MPa	ASTM D790**
Izod Impact, 23 °C	0.73 ft-lbs/in	39	J/m	ASTM D256
Unnotched Impact, -18°C	No Break	No Break		ASTM D4812
Vicat Softening Point	261 °F	127	°C	ASTM D1525
Hardness, Shore D		71		ASTM D2240
Heat Deflection Temperature, 66 psi ²	162 °F	72	°C	ASTM D648
Low Temperature Brittleness, F ₅₀ ²	<-105 °F	<-76	°C	ASTM D746

¹ Measures the number on inches of flow produced when molten resin is injected into a long, spiral channel (0.625" 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

These are typical values not to be construed as specification limits.

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Other Properties

Thermal Properties

Melting Temperature

Crystallization Temperature

Nominal Values

English Units

SI Units

Test Method

266.5 °F

130.3 °C

ASTM D3418

241.7 °F

116.5 °C

ASTM D3418

Molded Properties

Flexural Modulus, 2% Secant

Flexural Young's Modulus

Tensile Modulus, 1% Secant

Tensile Young's Modulus

English Units

SI Units

Test Method

157,800 psi

1,090 MPa

ASTM D790**

205,100 psi

1,410 MPa

ASTM D790**

119,300 psi

823 MPa

ASTM D638***

151,300 psi

1,040 MPa

ASTM D638***

** Conditions: 12.5 mm/min

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