

Alathon M5370

High Density Polyethylene

Alathon® 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, large shipping containers and all-terrain vehicle components.

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 sales representative for more information.

Processing Techniques Specific recommendations for processing M5370 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		6.9 g/10 min	ASTM D 1238
Spiral Flow ¹	8.9 in	22.6 (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			ASTMD 4796
Tensile Stress, Yield	4,130 psi	28.5 MPa	ASTM D 638*
Elongation, Yield		9 %	ASTM D 638*
Tensile Stress, Break	2,990 psi	20.6 MPa	ASTM D 638*
Elongation, Break		1,150 %	ASTM D 638*
Flexural Modulus, 1% Secant	189,030 psi	1,300 MPa	ASTM D 790**
Izod Impact, 23 °C	0.73 ft-lbs/in	39 J/m	ASTM D 256
Unnotched Impact, -18 °C	No Break	No Break	ASTM D 4812
Vicat Softening Point	261.7 °F	127.6 °C	ASTM D 1525
Hardness, Shore D		71	ASTM D 2240
Heat Deflection Temperature, 66 psi ²	164.3 °F	73.5 °C	ASTM D 648
Low Temperature Brittleness, F ₅₀ ²	<-105 °F	< -76 °C	ASTM D 746

Other Properties

Thermal Properties	Nominal Values		Test Method
	English Units	SI Units	
Melting Temperature	266.5 °F	130.3 °C	ASTM D 3418
Crystallization Temperature	241.7 °F	116.5 °C	ASTM D 3418
Molded Properties			ASTM D 4976
Flexural Modulus, 2% Secant	157,800 psi	1,090 MPa	ASTM D 790**
Flexural Young's Modulus	205,100 psi	1,410 MPa	ASTM D 790**
Tensile Modulus, 1% Secant	119,300 psi	823 MPa	ASTM D 638***
Tensile Young's Modulus	151,300 psi	1,040 MPa	ASTM D 638***

* Conditions: 50 mm/min, Type IV

** Conditions: 12.5 mm/min

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

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.