

Alathon®
M5352
High Density Polyethylene
Injection Molding Grade
Melt Index 4.5 Density 0.953
Applications

ALATHON M5352 is a high density copolymer with a narrow molecular weight distribution. This resin provides high impact strength and stress crack resistance, excellent color, low odor and good processability. Typical applications include open head pails, large shipping containers and 55-gallon drum lids

Regulatory Status

M5352 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 M5352 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	7.8 in	19.8 [cm]	Equistar
Density		0.953 g/cc	ASTM D 1505
Bulk Density	37-39 lb/ft ³	593-525 kg/m ³	ASTM D 1895
Molded Properties			ASTM D 4796
Tensile Stress, Yield	4,000 psi	27.6 MPa	ASTM D 638*
Elongation, Yield		11 %	ASTM D 638*
Tensile Stress, Break	4,000 psi	27.6 MPa	ASTM D 638*
Elongation, Break		1,700 %	ASTM D 638*
Flexural Modulus, 1% Secant	173,200 psi	1,190 MPa	ASTM D 790**
Izod Impact, 23 °C	1.2 ft-lbs/in	64 J/m	ASTM D 256
Unnotched Impact, -18 °C	No Break	No Break	ASTM D 4812
Vicat Softening Point	262 °F	128 °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

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

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Other
Properties

	Nominal Values		Test Method
	English Units	SI Units	
Thermal Properties			
Melting Temperature	268.2 °F	131.2 °C	ASTM D 3418
Crystallization Temperature	241.0 °F	116.1 °C	ASTM D 3418
Molded Properties	English Units	SI Units	Test Method
Flexural Modulus, 2% Secant	141,800 psi	978 MPa	ASTM D 4976
Flexural Young's Modulus	187,300 psi	1,290 MPa	ASTM D 790**
Tensile Modulus, 1% Secant	105,500 psi	727 MPa	ASTM D 790**
Tensile Young's Modulus	130,100 psi	897 MPa	ASTM D 638***

** Conditions: 12.5 mm/min

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

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