

Alathon®

M6061

High Density Polyethylene

Injection Molding Grade

Melt Index 6.0 Density 0.960

Applications

ALATHON M6061 is a narrow molecular weight distribution homopolymer that exhibits excellent stiffness and impact resistance. Typical applications include cases, totes, crates and open-head pails.

Regulatory Status

M6061 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 M6061 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		6.0 g/10 min	ASTM D 1238
Spiral Flow ¹	7.8 in	19.8 (cm)	Equistar
Density		0.960 g/cc	ASTM D 1505
Bulk Density	37-39 lb/ft ³	593-625 kg/m ³	ASTM D 1895
Molded Properties			ASTM D 4796
Tensile Stress, Yield	4,170 psi	28.8 MPa	ASTM D 638*
Elongation, Yield		10 %	ASTM D 638*
Tensile Stress, Break [†]	>3,400 psi	>23.4 MPa	ASTM D 638*
Elongation, Break [†]		>1,700 %	ASTM D 638*
Flexural Modulus, 1% Secant	181,900 psi	1,250 MPa	ASTM D 790**
Izod Impact, 23 °C	1.7 ft-lbs/in	91 J/m	ASTM D 256
Unnotched Impact, -18 °C	No Break	No Break	ASTM D 4812
Vicat Softening Point	264 °F	129 °C	ASTM D 1525
Hardness, Shore D		71	ASTM D 2240
Heat Deflection Temperature, 66 psi ²	167 °F	75 °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.
- [†] Specimens elongated past the limits of the extensionmeter.
- * Conditions: 50 mm/min, Type IV
- ** Conditions: 12.5 mm/min

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Other
Properties

Thermal Properties

Melting Temperature
Crystallization Temperature

Nominal Values

English Units

271.4 °F
240.1 °F

SI Units

133 °C
115.6 °C

Test Method

ASTM D 3418
ASTM D 3418

Molded Properties

Flexural Modulus, 2% Secant
Flexural Young's Modulus
Tensile Modulus, 1% Secant
Tensile Young's Modulus

English Units

148,700 psi
195,600 psi
118,400 psi
149,900 psi

SI Units

1,030 MPa
1,350 MPa
816 MPa
1,033 MPa

Test Method

ASTM D 4976
ASTM D 790**
ASTM D 790**
ASTM D 638***
ASTM D 638***

** Conditions: 12.5 mm/min

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