

Alathon®
M6580
High Density Polyethylene
Injection Molding Grade
Melt Index 8.2 Density 0.965
Applications

ALATHON M6580 is a narrow molecular weight distribution homopolymer that enhances processing and stiffness, exhibits excellent color, low odor and good processing stability. Typical applications include cases, crates, trays, tote bins and open-head pails.

Regulatory Status

M6580 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 M6580 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		8.2 g/10 min	ASTM D 1238
Spiral Flow ¹	9.9 in	25.1 [cm]	Equistar
Density		0.965 g/cc	ASTM D 1505
Bulk Density	33-37 lb/ft ³	529-593 kg/m ³	ASTM D 1895
Molded Properties			ASTM D 4796
Tensile Stress, Yield	4,650 psi	32.1 MPa	ASTM D 638*
Elongation, Yield		7 %	ASTM D 638*
Tensile Stress, Break	4,500 psi	31.0 MPa	ASTM D 638*
Elongation, Break		16 %	ASTM D 638*
Flexural Modulus, 1% Secant	239,900 psi	1,650 MPa	ASTM D 790**
Izod Impact, 23 °C	0.68 ft-lbs/in	36 J/m	ASTM D 256
Unnotched Impact, -18 °C	No Break	No Break	ASTM D 4812
Vicat Softening Point	266.9 °F	130.5 °C	ASTM D 1525
Hardness, Shore D		73	ASTM D 2240
Heat Deflection Temperature, 66 psi ²	181.0 °F	82.8 °C	ASTM D 648
Low Temperature Brittleness, F ₅₀ ²	-99.0 °F	-72.8 °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	272.1 °F	133.4 °C	ASTM D 3418
Crystallization Temperature	244.0 °F	117.8 °C	ASTM D 3418
Molded Properties	English Units	SI Units	Test Method
Flexural Modulus, 2% Secant	203,500 psi	1,400 MPa	ASTM D 4976
Flexural Young's Modulus	256,900 psi	1,770 MPa	ASTM D 790**
Tensile Modulus, 1% Secant	143,900 psi	932 MPa	ASTM D 790**
Tensile Young's Modulus	180,100 psi	1,240 MPa	ASTM D 638***

** Conditions: 12.5 mm/min

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

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