

Alathon® ETP

H4837

High Density Polyethylene

Injection Molding Grade

Melt Index 40 Density 0.948

Applications

ALATHON H4837 is a high-flow "freezer" grade resin that exhibits enhanced cold temperature impact performance, enhanced processing, and thermal stability with good color and organoleptic properties. Typical applications are rigid food containers such as 4-, 5- and 6- quart ice cream containers that are produced in fast cycling multi-cavity stack molds.

Regulatory Status

H4837 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 H4837 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	English Units	SI Units	Test Method
Melt Index, 190°C, 2.16 kg		40 g/10 min	ASTM D 1238
Spiral Flow ¹	18.4 in	46.7 [cm]	Equistar
Density		0.948 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, Break	3,160 psi	22 MPa	ASTM D 638*
Elongation, Break		5.4 %	ASTM D 638*
Flexural Modulus, 1% Secant	142,900 psi	980 MPa	ASTM D 790**
Izod Impact, 23 °C	0.43 ft-lbs/in	23 J/m	ASTM D 256
Unnotched Impact, -18 °C	6.8 ft-lbs/in	360 J/m	ASTM D 4812
Vicat Softening Point	250 °F	121 °C	ASTM D 1525
Hardness, Shore D		62	ASTM D 2240
Heat Deflection Temperature, 66 psi ²	147 °F	64 °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

Alathon® ETP (Enhanced Toughness and Processing), a Family of High Flow Resins

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**Other
Properties**

	Nominal Values		Test Method
	English Units	SI Units	
Thermal Properties			
Melting Temperature	259.7 °F	126.5 °C	ASTM D 3418
Crystallization Temperature	236.5 °F	113.6 °C	ASTM D 3418
Molded Properties	English Units	SI Units	Test Method
Flexural Modulus, 2% Secant	120,300 psi	806 MPa	ASTM D 4976
Flexural Young's Modulus	153,700 psi	1,060 MPa	ASTM D 790 [†]
Tensile Modulus, 1% Secant	96,200 psi	663 MPa	ASTM D 790 [†]
Tensile Young's Modulus	120,000 psi	827 MPa	ASTM D 638 ^{††}

† Conditions: 12.5 mm/min

†† Conditions: 50 mm/min, Type I

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