

Alathon®

H5618

High Density Polyethylene

Injection Molding Grade

Melt Index 18 Density 0.956

Applications

ALATHON H5618 provides easy processing characteristics and exhibits excellent toughness properties and color as well as low odor and good processing stability. Typical applications include housewares, containers, caps and closures.

Regulatory Status

H5618 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 H5618 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

	Nominal Values			Test Method
	English Units	SI Units		
Resin Properties				
Melt Index, 190°C, 2.16 kg		18 g/10 min		ASTM D 1238
Spiral Flow ¹	11.7 in	29.7 (cm)		Equistar
Density		0.956 g/cc		ASTM D 1505
Bulk Density	33-37 lb/ft ³	529-593 kg/m ³		ASTM D 1895
Molded Properties				
Tensile Stress, Yield	4,230 psi	29.2 MPa		ASTM D 4796
Elongation, Yield		8 %		ASTM D 638*
Tensile Stress, Break	3,480 psi	24 MPa		ASTM D 638*
Elongation, Break		62 %		ASTM D 638*
Flexural Modulus, 1% Secant	203,800 psi	1,140 MPa		ASTM D 790**
Izod Impact, 23 °C	0.58 ft-lbs/in	31 J/m		ASTM D 256
Unnotched Impact, -18 °C	No Break	No Break		ASTM D 4812
Vicat Softening Point	256 °F	124.6 °C		ASTM D 1525
Hardness, Shore D		69		ASTM D 2240
Heat Deflection Temperature, 66 psi ²	163 °F	73 °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	266.4 °F	130.2 °C	ASTM D 3418
Melting Temperature	239.7 °F	115.4 °C	ASTM D 3418
Molded Properties	English Units	SI Units	Test Method
Flexural Modulus, 2% Secant	170,900 psi	1,180 MPa	ASTM D 4976
Flexural Young's Modulus	216,700 psi	1,490 MPa	ASTM D 790**
Tensile Modulus, 1% Secant	122,600 psi	845 MPa	ASTM D 790**
Tensile Young's Modulus	152,600 psi	1,050 MPa	ASTM D 638***
			ASTM D 638***

** Conditions: 12.5 mm/min

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

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