

Alathon

H4620

High Density Polyethylene
Injection Molding Grade

Melt Index 19.5 Density 0.946

Applications

Alathon H4620 is a medium-flow resin that exhibits good cold temperature impact performance, enhanced processing and thermal stability. Typical applications are thinner-walled parts that require chemical resistance.

Regulatory Status

H4620 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 H4620 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 LyondellBasell web site. Additional [Injection Molding Technical Topics](#) can also be found on the LyondellBasell web site.

Suggested Startup Conditions

Extruder Zone	Rear	Center	Front	Nozzle
Cylinder Temperature, °F (°C)	450 (232)	470 (243)	475 (246)	475 (246)

Typical Properties

Resin Properties	Nominal Values		Test Method
	English Units	SI Units	
Melt Index, 190°C, 2.16 kg Spiral Flow ¹	12.0 in	19.5 g/10 min 30.5 (cm)	ASTM D 1238 Equistar
Density		0.946 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	3,420 psi	23.6 MPa	ASTM D 638*
Elongation, Yield		10 %	ASTM D 638*
Tensile Stress, Break	1,880 psi	13.0 MPa	ASTM D 638*
Elongation, Break		130 %	ASTM D 638*
Flexural Modulus, 1% Secant	136,300 psi	940 MPa	ASTM D 790**
Izod Impact, 23 °C	0.83 ft-lbs/in	44 J/m	ASTM D 256
Unnotched Impact, -18 °C		No Break	ASTM D 4812
Hardness, Shore D		70	ASTM D 2240
Heat Deflection Temperature, 66 psi ²	148°F	64°C	ASTM D 648

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 temperatures.

* Conditions: 50 mm/min, Type IV

** Conditions: 12.5 mm/min

See Page 2 for Other Properties

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Other Properties

Thermal Properties	Nominal Values		Test Method
	English Units	SI Units	
Melting Temperature	259.3 °F	126.3 °C	ASTM D 3418
Crystallization Temperature	234.3 °F	112.4 °C	ASTM D 3418
Molded Properties	English Units	SI Units	Test Method
Flexural Modulus, 2% Secant	115,100 psi	794 MPa	ASTM D 4976
Flexural Young's Modulus	157,400 psi	1,090 MPa	ASTM D 790**
Tensile Modulus, 1% Secant	130,300 psi	898 MPa	ASTM D 790**
Tensile Young's Modulus	165,300 psi	1,140 MPa	ASTM D 638***

** Conditions: 12.5 mm/min

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

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