

Alathon

# H5220

High Density Polyethylene  
Grade Used in Injection Molding  
Melt Index: 20 Density: 0.952



## Applications

Alathon H5220 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

H5220 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 H5220 can only be made when the processing conditions, equipment and end-use applications are known. For additional information, please contact your Equistar Sales Representative or refer to the [Start-up Conditions for HDPE](#) on [www.lyondellbasell.com](http://www.lyondellbasell.com). Additional [Injection Molding Technical Topics](#) can also be found on the LyondellBasell website.

## 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		20 g/10 min	ASTM D 1238
Spiral Flow <sup>1</sup>	11.6 in	29.4 (cm)	Equistar
Density		0.952 g/cc	ASTM D 1505
Bulk Density	33-37 lb/ft <sup>3</sup>	529-593 kg/m <sup>3</sup>	ASTM D 1895
<b>Molded Properties</b>			ASTM D 4796
Tensile Stress, Yield	3,790 psi	26.2 MPa	ASTM D 638*
Elongation, Yield		11 %	ASTM D 638*
Tensile Stress, Break	1,920 psi	13.2 MPa	ASTM D 638*
Elongation, Break		71 %	ASTM D 638*
Flexural Modulus, 1% Secant	157,000 psi	1,080 MPa	ASTM D 790**
Izod Impact, 23 °C	0.71 ft-lbs/in	38 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		76	ASTM D 2240
Heat Deflection Temperature, 66 psi <sup>2</sup>	163 °F	73 °C	ASTM D 648
Low Temperature Brittleness, F <sub>50</sub> <sup>1</sup>	<-105 °F	<-76 °C	ASTM D 746

<sup>1</sup> 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.

<sup>2</sup> 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

See Page 2 for Other Properties

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## Other Properties

	Nominal Values		Test Method
	English Units	SI Units	
<b>Thermal Properties</b>			
Melting Temperature	266.4 °F	128.1 °C	ASTM D 3418
Crystallization Temperature	239.7 °F	115.8 °C	ASTM D 3418
<b>Molded Properties</b>	<b>English Units</b>	<b>SI Units</b>	<b>Test Method</b>
Flexural Modulus, 2% Secant	131,000 psi	903 MPa	ASTM D 4976
Flexural Young's Modulus	181,000 psi	1,250 MPa	ASTM D 790**
Tensile Modulus, 1% Secant	145,000 psi	1,000 MPa	ASTM D 790**
Tensile Young's Modulus	183,000 psi	1,260 MPa	ASTM D 638***
			ASTM D 638***

\*\* Conditions: 12.5 mm/min

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