

Alathon

M5040

High Density Polyethylene
Injection Molding Grade

Melt Index 4.0 Density 0.950



Applications

Alathon M5040 is a copolymer with broad molecular weight distribution. This resin exhibits excellent color, low odor, and good processing stability. Typical applications for this resin are specialty applications with high ESCR and applications requiring a balance of ESCR, impact and processibility.

Regulatory Status

M5040 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 polyethylene sales representative for more information.

Processing Techniques

Specific recommendations for processing M5040 can only be made when the processing conditions, equipment and end use are known. For further suggestions, please contact your Equistar sales representative.

Suggested Start-up Conditions

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

Typical Properties

Property	Nominal Value	Units	Test Method
Melt Index	4.0	10 min	ASTM D 1238
Density	0.950	g/cc	ASTM D 1505
Spiral Flow ¹	11.2 (27.4)	in (cm)	Equistar
Tensile Strength @ Break	2,050 (14.1)	psi (MPa)	ASTM D 638
Tensile Strength @ Yield ²	3,720 (25.6)	psi (MPa)	ASTM D 638
Elongation @ Yield ²	13	%	ASTM D 638
1% Secant Modulus ³	151,000 (1,040)	psi (MPa)	ASTM D 790
2% Secant Modulus ³	125,000 (862)	psi (MPa)	ASTM D 790
Vicat Softening Point	255 (124)	°F (°C)	ASTM D 1525
Hardness, Shore D	71		ASTM D 2240
Heat Deflection Temperature, 66 psi ³	151 (66)	°F (°C)	ASTM D 648
Low Temperature Brittleness, F ₅₀ ³	<-105 (<-76)	°F (°C)	ASTM D 746

¹ Measures the number of inches of flow produced when molten resin is injected into a long, spiral channel (0.625" insert), at a constant injection pressure of 1000 psi with a melt temperature of 440°F.

² Crosshead speed - 2" min

³ Crosshead speed - 0.5" min

⁴ Data are for control and development work and not intended for use in design or predicting performance at elevated or sub-ambient temperatures.