

Technical Data Sheet

Alathon M5363

High Density Polyethylene



Product Description

Alathon M5363 is a high density copolymer with a narrow molecular weight distribution. This resin provides high impact strength and stress crack resistance, excellent color, low odor and good processability. Typical applications include open head pails, large shipping containers and 55-gallon drum lids.

Status	Commercial
Availability	North America
Application	Containers; Pails
Market	Rigid Packaging
Processing Method	Injection Molding

Typical Properties	Nominal Value	English Units	Nominal Value	SI Units	Test Method
Physical					
Melt Flow Rate, (190 °C/2.16 kg)	6.5	g/10 min	6.5	g/10 min	ASTM D1238
Density, (23 °C)	0.953	g/cm ³	0.953	g/cm ³	ASTM D1505
Bulk Density	33-37	lb/ft ³	529-593	kg/m ³	ASTM D1895
Spiral Flow	8.9	in	22.6	cm	LYB Method
Mechanical					
Flexural Modulus					
(1% Secant)	187000	psi	1290	MPa	ASTM D790
(2% Secant)	156000	psi	1070	MPa	ASTM D790
Flexural Young's Modulus	210000	psi	1450	MPa	ASTM D790
Tensile Modulus, (1% Secant)	117000	psi	807	MPa	ASTM D638
Tensile Young's Modulus	149000	psi	1030	MPa	ASTM D638
Tensile Stress at Break, (23 °C)	3490	psi	24.1	MPa	ASTM D638
Tensile Stress at Yield, (23 °C)	4070	psi	28.1	MPa	ASTM D638
Tensile Elongation at Break, (23 °C)	1520	%	1520	%	ASTM D638
Tensile Elongation at Yield, (23 °C)	8.5	%	8.5	%	ASTM D638
Impact					
Notched Izod Impact Strength, (23 °C)	0.84	ft-lb/in	45	J/m	ASTM D256
Unnotched Impact Strength, (-18 °C)	No Break		No Break		ASTM D4812
Hardness					
Shore Hardness, (Shore D, max)	70		70		ASTM D2240
Thermal					
Vicat Softening Temperature	259	°F	126	°C	ASTM D1525
Low Temperature Brittleness, F ₅₀	<-105	°F	<-76	°C	ASTM D746
Deflection Temperature Under Load, (66 psi, Unannealed)	165	°F	74	°C	ASTM D648
Melting Temperature	265.8	°F	129.9	°C	ASTM D3418



Crystallization Temperature	242.6 °F	117.0 °C	ASTM D3418
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Notes

Conditions of Tensile Stress and Elongation values are: 50 mm/min, Type IV specimen.

Conditions of Flexural Modulus values are: 0.5 inches/min or 12.5 mm/min.

Conditions of Tensile Modulus values are: 50 mm/min, Type I Specimen.

Spiral Flow 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.

Deflection Temperature Under Load and Low Temperature Brittleness data are for control and development work and are not intended for use in design or predicting performance at elevated or sub-ambient temperatures.

These are typical property values not to be construed as specification limits.

Processing Techniques

Specific recommendations for resin type and processing conditions can only be made when the end use, required properties and fabrication equipment are known.

