

Alathon® M5352

High Density Polyethylene Copolymer
LyondellBasell Industries

Message:

Alathon M5352 is a copolymer with narrow molecular weight distribution. This resin provides high impact strength and stress crack resistance, excellent color, low odor and good processing stability. Typical applications include open head pails, large shipping containers and 55-gallon drum lids. M5352 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."

General Information			
UL YellowCard	E62552-100150734		
Features	High ESCR (Stress Cracking Resistance)		
	High density		
	Copolymer		
	Impact resistance, good		
	Workability, good		
	Good coloring		
	The smell is low to none		
	Compliance of Food Exposure		
Uses	Narrow molecular weight distribution		
	Cover		
	Container		
Agency Ratings	Barrel		
	FDA 21 CFR 177.1520		
	Available colors		
Appearance	Injection molding		
Processing Method			
Physical	Nominal Value	Unit	Test Method
Density	0.953	g/cm ³	ASTM D1505
Apparent Density	0.59 - 0.63	g/cm ³	ASTM D1895
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	4.5	g/10 min	ASTM D1238
Spiral Flow	19.8	cm	Internal method
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ¹			ASTM D638
-- ²	897	MPa	ASTM D638
1% secant	727	MPa	ASTM D638
Tensile Strength			ASTM D638
Yield ³	27.6	MPa	ASTM D638
Fracture ⁴	27.6	MPa	ASTM D638

Tensile Elongation			ASTM D638
Yield ⁵	11	%	ASTM D638
Fracture ⁶	1700	%	ASTM D638
Flexural Modulus ⁷			ASTM D790
-- ⁸	1290	MPa	ASTM D790
1% secant	1190	MPa	ASTM D790
2% secant	978	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	64	J/m	ASTM D256
Unnotched Izod Impact (-18°C)	No Break		ASTM D4812
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (0.45 MPa, Unannealed)	73.1	°C	ASTM D648
Brittleness Temperature ⁹	< -76.0	°C	ASTM D746
Vicat Softening Temperature	128	°C	ASTM D1525
Melting Temperature	131	°C	ASTM D3418
Peak Crystallization Temperature (DSC)	116	°C	ASTM D3418
Injection	Nominal Value	Unit	
Rear Temperature	232	°C	
Middle Temperature	243	°C	
Front Temperature	246	°C	
Nozzle Temperature	246	°C	
Processing (Melt) Temp	246 - 280	°C	
Mold Temperature	7.00 - 18.0	°C	
Injection Rate	Moderate-Fast		
Back Pressure	0.345 - 1.03	MPa	
Injection instructions			
Injection Pressure: Maximum (w/out flash)Holding Pressure: Minimum (75 to 85% of Injection Pressure)Cushion: Minimum but presentDecompression Range: 0.25 to 0.50 in			
NOTE			
1.	Type 1, 50mm/min		
2.	Tensile Young's Modulus		
3.	Type 4, 50mm/min		
4.	50 mm/min		
5.	Type 4, 50mm/min		
6.	50 mm/min		
7.	13 mm/min		
8.	Flexural Young's Modulus		
9.	F50		

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