

Alathon® M6138

High Density Polyethylene
LyondellBasell Industries

Message:

ALATHON M6138 is high density polyethylene resin for use in injection molding applications. This resin exhibits good impact resistance and high stiffness. Typical applications include agricultural bins, crates, open head pails, trays and consumer durable goods.

General Information			
Features	Food Contact Acceptable		
	Good Impact Resistance		
	High Stiffness		
Uses	Agricultural Applications		
	Consumer Applications		
	Crates		
	Pails		
Agency Ratings	FDA 21 CFR 177.1520		
Forms	Pellets		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Density	0.961	g/cm ³	ASTM D1505
Apparent Density	0.53 to 0.59	g/cm ³	ASTM D1895
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	3.8	g/10 min	ASTM D1238
Spiral Flow	20.3	cm	Internal Method
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	72		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ¹			ASTM D638
--	1220	MPa	
1% Secant	939	MPa	
Tensile Strength ²			ASTM D638
Yield	31.9	MPa	
Break	21.7	MPa	
Tensile Elongation ³			ASTM D638
Yield	7.0	%	
Break	810	%	
Flexural Modulus ⁴			ASTM D790
--	1740	MPa	
1% Secant	1640	MPa	

2% Secant	1370	MPa	
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	60	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)	81.7	°C	ASTM D648
Brittleness Temperature	< -76.0	°C	ASTM D746
Vicat Softening Temperature	131	°C	ASTM D1525
Peak Melting Temperature	134	°C	ASTM D3418
Peak Crystallization Temperature (DSC)	118	°C	ASTM D3418
Injection	Nominal Value	Unit	
Rear Temperature	232	°C	
Middle Temperature	243	°C	
Front Temperature	246	°C	
Nozzle Temperature	246	°C	
NOTE			
1.	Type I, 50 mm/min		
2.	Type IV, 50 mm/min		
3.	Type IV, 50 mm/min		
4.	13 mm/min		

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