Technical Data Sheet

Alathon M6138

High Density Polyethylene

Product Description

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.

Regulatory Status

For regulatory compliance information, see *Alathon* M6138 Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).

Status	Commercial: Active
Availability	North America
Application	Crates; Pallets/Trays/Tote Bins
Market	Rigid Packaging
Processing Method	Injection Molding; Sheet and Profile Extrusion

Typical Properties	Nominal Value	English Units	Nominal Value	SI Units	Test Method
Physical					
Melt Flow Rate, (190 °C/2.16 kg)	3.8	g/10 min	3.8	g/10 min	ASTM D1238
Density, (23 °C)	0.961	g/cm³	0.961	g/cm³	ASTM D1505
Bulk Density	33-37	lb/ft³	529-593	kg/m³	ASTM D1895
Spiral Flow	8.0	in	20.3	cm	LYB Method
Mechanical					
Flexural Modulus					
(1% Secant)	238000	psi	1640	MPa	ASTM D790
(2% Secant)	199000	psi	1370	MPa	ASTM D790
Flexural Young's Modulus	253000	psi	1740	MPa	ASTM D790
Tensile Modulus, (1% Secant)	136000	psi	938	MPa	ASTM D638
Tensile Young's Modulus	177000	psi	1220	MPa	ASTM D638
Tensile Stress at Break, (23 °C)	3150	psi	21.7	MPa	ASTM D638
Tensile Stress at Yield, (23 °C)	4620	psi	31.9	MPa	ASTM D638
Tensile Elongation at Break, (23 °C)	810	%	810	%	ASTM D638
Tensile Elongation at Yield, (23 °C)	7	%	7	%	ASTM D638
Impact					
Notched Izod Impact Strength, (23 °C)	1.1	ft-lb/in	59	J/m	ASTM D256
Unnotched Impact Strength, (-18 °C)	No Break		No Break		ASTM D4812
Hardness					
Shore Hardness, (Shore D, max)	72		72		ASTM D2240
Thermal					
Vicat Softening Temperature	267	°F	131	°C	ASTM D1525
Low Temperature Brittleness, F_{50}	<-105	°F	<-76	°C	ASTM D746
Deflection Temperature Under Load, (66 psi, Unannealed)	179.1	°F	81.7	°C	ASTM D648
Melting Temperature	273.0	°F	133.9	°C	ASTM D3418

Crystallization Temperature	244.4 °F	118.0 °C	ASTM D3418

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.