Alathon® L4904

High Density Polyethylene

LyondellBasell Industries

Message:

Alathon L4904 is a bimodal, high molecular weight, high density polyethylene resin with excellent processing characteristics. L4904 is selected by customers for the high performance requirements of demanding pressure pipe applications including gas distribution, industrial piping, mining, oil & gas gathering, municipal water service lines and sewers. Customers typically use L4904 in applications requiring high resistance to pipe failure by rapid crack propagation and slow crack growth mechanisms. When L4904 is combined with an Equistar approved black at the correct loading, this compound meets the following standards:
Plastics Pipe Institute (PPI) PE 4710 per PPI TR-3
PE 100 per PPI TR-3
ASTM D3350 Cell Classification PE445574C and PE445576C
NSF Standard 14 and Standard 61 for Potable Water Pipe and Fittings
NSF Standard 358-1 for PE Pipe and Fittings for "Geothermal" Heat Pump Systems
CSA B137.1 for pipe, tubing, and fittings for cold-water pressure services
ASTM D2513 for PE gas pressure pipe, tubing and fittings
CSA B137.4 for PE piping systems for gas services

General Information	
Features	Good Crack Resistance Good Processability High Molecular Weight
Uses	Piping
Agency Ratings	ASTM D 2513 ASTM D 3350 PE445574C ASTM D 3350 PE445576C CSA B137.1 CSA B137.4 NSF 14 NSF 358-1 NSF 61 PPI PE-100 PPI PE-4710 PPI TR-3
Processing Method	Pipe Extrusion

Physical	Nominal Value	Unit	Test Method
Density	0.949	g/cm³	ASTM D1505
Melt Mass-Flow Rate (MFR) [1]			ASTM D1238
190°C/2.16 kg	0.040	g/10 min	
190°C/21.6 kg	7.0	g/10 min	

Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638

Yield	24.1	MPa	
Break	35.2	MPa	
Tensile Elongation (Break)	800	%	ASTM D638
Flexural Modulus - 2% Secant	1010	MPa	ASTM D790
Creep Rupture Strength (-7°C) [2]	> 200	hr	ASTM D1598
Hydrostatic Design Basis			ASTM D2837
23°C	11.0	MPa	
60°C	6.89	MPa	
Notch Pipe Test (80°C, 102 mm) [3]	> 3.4	month	ISO 13479
Resistance to Rapid Crack Propagation, Pc (0°C, 102 mm) [4]	> 12.0	bar	ISO 13477
Resistance to Rapid Crack Propagation, Tc - 5 bar (102 mm) [5]	< -7	°C	ISO 13477
DSC Induction Temperature	250	°C	ASTM D3350
Minimum Required Strength (20°C)	10.0	MPa	ISO 12162
PENT - at 2.4 MPA (80°C)	> 2000	hr	ASTM F1473
Thermal	**Nominal Value**	**Unit**	**Test Method**
Brittleness Temperature	< -60.0	°C	ASTM D746
NOTE			
1.	Values were determined on natural resin.		
2.	12.4 MPa		
3.	4.6 MPa; Pipe Diameter of 4" and SDR 11		
4.	Pipe Diameter of 4" and SDR 11		
5.	Pipe Diameter of 4" and SDR 11		

Recommended distributors for this material

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