Technical Data Sheet

Alathon L4904LS

High Density Polyethylene

Product Description

Alathon L4904LS is a bimodal, high molecular weight, high density polyethylene resin with excellent processing characteristics. L4904LS is selected by customers for pressure pipe applications including gas distribution, industrial piping, mining, oil & gas gathering, municipal water service lines and sewers. Customers typically use L4904LS in large diameter, thick wall applications requiring high resistance to pipe failure by rapid crack propagation and slow crack growth mechanisms. Please contact your LyondellBasell Technical Service Engineer or Sales Manager for an approved color and black masterbatch list. When L4904LS is combined with a LyondellBasell approved color or black masterbatch at the correct use level, this compound may meet the following standards or requirements:

- ASTM D3350 Cell Classifications: **PE445574C, PE445576C, PE445574E.** For Oxidative Resistance Classification Categorization values (CC), please contact your LyondellBasell Technical Service Engineer or Sales Manager.
- NSF Standard 14 and Standard 61 for Potable Water Pipe and Fittings
- Plastics Pipe Institute (PPI) PE 4710 and PE 100 per PPI TR-3

Application	Drinking Water Pipe
Market	Industrial, Building & Construction; Pipe
Processing Method	Pipe

Typical Properties	Nominal Value	English Units	Nominal Value	SI Units	Test Method
Physical					
Melt Flow Rate					
(190 °C/5.0 kg)	0.15	g/10 min	0.15	g/10 min	ASTM D1238
(190 °C/21.6 kg)	7	g/10 min	7	g/10 min	ASTM D1238
Density, (23 °C)	0.949	g/cm³	0.949	g/cm³	ASTM D1505
Mechanical					
Flexural Modulus, (2% Secant)	144000	psi	993	MPa	ASTM D790
Tensile Stress at Break	5100	psi	35.2	MPa	ASTM D638
Tensile Stress at Yield	3500	psi	24.1	MPa	ASTM D638
Tensile Elongation at Break	680	%	680	%	ASTM D638
PENT on Natural Resin, (2.4 MPa, 80 °C, Air)	5000	hr	5000	hr	ASTM F1473
Thermal					
Low Temperature Brittleness, F_{50}	<-105	°F	<-76	°C	ASTM D746
DSC Induction Temperature	500	°F	260	°C	ASTM D3350
Oxidative-Induction Time, (200 °C)	100	min	100	min	ASTM D3895
Conformance Testing					

Hydrostatic Design Basis					
(73 °F)	1600	psi			ASTM D2837
(140 °F)	1000	psi			ASTM D2837
Minimum Required Strength, (20 °C)			10	MPa	ISO 12162
Creep Rupture Strength, (20 °C, 12.4 MPa)	>200	hr	>200	hr	ASTM D1598
Resistance to Rapid Crack Propagation, Pc @ 32 °F	>12	bar	>12	bar	ISO 13477
Values were obtained on 4" SDR11 pipe made with L4904LS and an approved masterbatch.					
Resistance to Rapid Crack Propagation, Tc @ 5 bar	<7	°F	<-14	°C	ISO 13477
Values were obtained on 4" SDR11 pipe made with L4904LS and an approved masterbatch.					