



Petrothene®

# L5906

High Density Polyethylene  
Wire and Cable Grade

Melt Index 0.057 Density 0.959

## Applications

PETROTHENE L5906 is a high molecular weight high density homopolymer with a broad bimodal molecular weight distribution. This resin exhibits excellent stiffness and very high tensile strength. Typical applications for wire and cable include optical fiber buffer tubes.

## Processing Techniques

L5906, like other thermoplastic polyolefin resins, can be extruded using a conventional extruder. Below are suggested extrusion conditions for L5906. These conditions are intended as general guidelines only and are not optimum values, since manufacturing conditions such as extruder type and size affect the processing of thermoplastic resins. Contact your Equistar sales or technical service representative for more information.

## Suggested General Extrusion Conditions

Extruder Zone	Temperature Range
Feed	300°- 325°F (149° - 163°C)
Zone 2	350°- 400°F (177° - 204°C)
Zone 3	400°- 450°F (204° - 232°C)
Zone 4-X	475°- 500°F (246° - 260°C)
Adapter	475°- 500°F (246° - 260°C)
Die	475°- 500°F (246° - 260°C)

## Industry Specifications

L5906 meets the requirements of the following: ASTM D 1248, Type III, Class A, Category 5, Grade E10. Federal LP390C, Type II, Class H, Category 5, Grade 5. L5906 also 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." Specific limitations or conditions of use may apply. Contact your Equistar sales or technical service representative for details.

See Page 2 for Physical Properties.



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**Physical Properties**

Typical properties for L5906 appear in the table below. For information on other resins and compounds for Wire and Cable contact your Equistar sales or technical service representative.

Property*	Nominal Value	Units	ASTM Test Method
Melt Index	0.057	g/10 min	D 1238
Density	0.959	g/cc	D 1505
Tensile Strength @ Break	5,800 (40.0)	psi (MPa)	D 638
Tensile Stress @ Yield	4,300 (29.7)	psi (MPa)	D 638
Elongation @ Break	900	%	D 638
Flexural Modulus, 1% Secant	213,000 (1,469)	psi (MPa)	D 790
Low Temperature Bitterness, F <sub>50</sub>	< -76	°C	D 746
Thermal Stress Crack Resistance, F <sub>50</sub>	> 264	hours	D 2951
ESCR, 10% Igepal®, F <sub>50</sub>	> 96	hours	D 1693
Dielectric Constant @ 1 MHz	2.36		D 1531
Dissipation Factor @ 1 MHz	0.00005		D 1531
Volume Resistivity, Original	7.6x10 <sup>17</sup>	ohm-cm	D 257
Hardness, Shore D	69	D max	D 2240
Vicat Softening Point	130	°C	D 1525
Linear Coefficient of Thermal Expansion @ 23°C	1.38 x 10 <sup>-4</sup>	in/in/°C	D 696

\* All properties determined from compression-molded plaques.

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Lyondell Chemical Company  
1221 McKinney, Suite 700  
P.O. Box 2583  
Houston, Texas 77252-2583  
800.615.8999  
<http://www.lyondell.com>