

Petrothene

# LR590001



High Density Polyethylene

Wire and Cable Grade

Melt Index: 0.80 Density: 0.948

## Applications

*Petrothene* LR590001 is selected by customers for use as primary insulation for applications with demanding aging requirements such as telephone singles. LR590001 is a high density resin which exhibits low shrinkback after extrusion. Antioxidant has been added to ensure thermal stability during processing. The resin also contains a metal deactivator to prevent degradation from copper while the cable is in service.

## Processing Techniques

LR590001, like other thermoplastic polyolefin resins, can be extruded as wire and cable insulation using a conventional extruder. Below are suggested extrusion conditions for LR590001. These conditions are intended as general guidelines only and are not optimum values, since manufacturing variables such as extruder type and size have an effect on the processing of thermoplastic resins.

## Suggested General Extrusion Conditions

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

## Industry Specifications

LR590001 meets the requirements of the following: ASTM D 1248-2, Type III, Class A, Category 4, Grades E8 and E9; Federal LP 390C, Type II, Class H, Category 4, Grade 1, REA PE-22, REA PE-39.

## Typical Properties

Property*	Nominal Value	Units	Test Method
Melt Index	0.80	g/10 min	ASTM D1238
Density	0.948	g/cm <sup>3</sup>	ASTM D1505
Low Temperature Brittleness, F <sub>50</sub>	<-76	°C	ASTM D746
ESCR, 100% Igepal®	0 Failures @ 48 hours		ASTM D1693
Tensile Stress @ Break	2,350 (16.2)	psi (MPa)	ASTM D638
Tensile Strength @ Yield	3,150 (21.7)	psi (MPa)	ASTM D638
Elongation @ Break	590	%	ASTM D638
Dielectric Constant @ 1 MHz	2.33		ASTM D1531
Dissipation Factor @ 1 MHz	0.00007		ASTM D1531
Volume Resistivity, Original	1x10 <sup>18</sup>	ohm-cm	ASTM D991

\* All properties determined from compression molded plaques.

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These are typical values not to be construed as specification limits.

**See Page 2 for Additional Information**