



Petrothene®

# LR590001

High Density Polyethylene

Wire and Cable Grade

Melt Index 0.80 Density 0.948

## Applications

PETROTHENE LR590001 is designed as primary insulation for telephone singles. LR590001 is a high density resin designed for 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 LRWC409. 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 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	ASTM Test Method
Melt Index	0.80	g/10 min	D 1238
Density	0.948	g/cc	D 1505
Low Temperature Brittleness, F <sub>50</sub>	<-76	°C	D 746
ESCR, 100% Igepal®	0 Failures @ 48 hours		D 1693
Tensile Stress @ Break	2,350 (16.2)	psi (MPa)	D 638
Tensile Strength @ Yield	3,150 (21.7)	psi (MPa)	D 638
Elongation @ Break	590	%	D 638
Dielectric Constant @ 1 MHz	2.33		D 1531
Dissipation Factor @ 1 MHz	0.00007		D 1531
Volume Resistivity, Original	1x10 <sup>18</sup>	ohm-cm	D 991

\* All properties determined from compression molded plaques.

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