

LyondellBasell Petrothene® LR590005 High Density Polyethylene

Category : Polymer , Thermoplastic , Polyethylene (PE) , HDPE , High Density Polyethylene (HDPE), Extruded

Material Notes:

ApplicationsPETROTHENE LR 5900-05 is a high density, high molecular weight resin designed for primary insulation for electronic cables. This resin exhibits low shrinkback after extrusion, contains a lower level of antioxidant than the standard LR 5900-00, and is not suitable for the telecommunications applications for which LR 5900-00 was formulated. Antioxidant has been added to LR 5900-05 along with a metal deactivator to ensure thermal stability during processing and to prevent degradation from copper while the cable is in service, respectively.
Processing TechniquesLR 5900-05, like other thermoplastic polyolefin compounds, can be extruded as wire and cable insulation using a conventional extruder. Below are suggested extrusion conditions for LR 5900-05. 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.
Industry SpecificationsLR 5900-05 meets the requirements of the following: ASTM D1248-2, Type III, Class A, Category 4, Grades E8 and E9; Federal LP 390C, Type 11, Class H, Category 4, Grade 1; REA PE-22; REA 7CFR 1755.390. This product is from the former Equistar product line.

Order this product through the following link:

http://www.lookpolymers.com/polymer_LyondellBasell-Petrothene-LR590005-High-Density-Polyethylene.php

Physical Properties	Metric	English	Comments
Density	0.943 g/cc	0.0341 lb/in ³	ASTM D1505
Environmental Stress Crack Resistance	>= 168 hour	>= 168 hour	100% Igepal; 0 failures after 168 hours; ASTM D1693
Thermal Stress Crack Resistance	>= 336 hour	>= 336 hour	0 failures at 14 days in water at 100°C.; Mil-Spec MS-17000
Melt Flow	0.70 g/10 min	0.70 g/10 min	ASTM D1238

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	16.2 MPa	2350 psi	ASTM D638
Tensile Strength, Yield	21.7 MPa	3150 psi	ASTM D638
Elongation at Break	800 %	800 %	ASTM D638

Thermal Properties	Metric	English	Comments
Brittleness Temperature	<= -76.0 °C	<= -105 °F	F ₅₀ ; ASTM D746

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+18 ohm-cm	1.00e+18 ohm-cm	ASTM D257
Dielectric Constant	2.33 @Frequency 1e+6 Hz	2.33 @Frequency 1e+6 Hz	ASTM D1531

Electrical Properties	Metric ⁴⁰	English ⁴⁰	Comments
Dissipation Factor	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	ASTM D1551

Processing Properties	Metric	English	Comments
Feed Temperature	149 - 163 Å°C	300 - 325 Å°F	
Zone 2	177 - 204 Å°C	350 - 400 Å°F	
Zone 3	204 - 232 Å°C	400 - 450 Å°F	
Zone 4-x	238 - 260 Å°C	460 - 500 Å°F	
Adapter Temperature	246 - 260 Å°C	475 - 500 Å°F	
Die Temperature	246 - 260 Å°C	475 - 500 Å°F	
Melt Temperature	246 - 260 Å°C	475 - 500 Å°F	

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