

Petrothene® LR590005

High Density (HMW) Polyethylene

LyondellBasell Industries

Message:

PETROTHENE LR590005 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 LR590001, and is not suitable for the telecommunications applications for which LR590001 was formulated. Antioxidant has been added to LR590005 along with a metal deactivator to ensure thermal stability during processing and to prevent degradation from copper while the cable is in service, respectively.

General Information			
Additive	Antioxidant		
	Metal Deactivator		
Features	Antioxidant		
	High Molecular Weight		
	Low Shrinkage		
Uses	Insulation		
	Wire & Cable Applications		
Agency Ratings	ASTM D 1248, III, Class A, Cat. 4, Grade E8		
	ASTM D 1248, III, Class A, Cat. 4, Grade E9		
	FED L-P-390C, Type II, Class H, Category 4, Grade 1		
	REA PE-22		
Forms	Pellets		
Processing Method	Extrusion		
Physical	Nominal Value	Unit	Test Method
Density	0.948	g/cm ³	ASTM D1505
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	0.80	g/10 min	ASTM D1238
Environmental Stress-Cracking Resistance (100% Igepal, F0)	168	hr	ASTM D1693
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638
Yield	21.7	MPa	
Break	16.2	MPa	
Tensile Elongation (Break)	800	%	ASTM D638
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -76.0	°C	ASTM D746
Thermal Stress Crack Resistance ¹ (100°C)	336	hr	MIL MS-17000
Electrical	Nominal Value	Unit	Test Method

Volume Resistivity	1.0E+18	ohms·cm	ASTM D257
Dielectric Constant (1 MHz)	2.33		ASTM D1531
Dissipation Factor (1 MHz)	4.0E-5		ASTM D1531
Extrusion	Nominal Value	Unit	
Cylinder Zone 1 Temp.	149 to 163	°C	
Cylinder Zone 2 Temp.	177 to 204	°C	
Cylinder Zone 3 Temp.	204 to 232	°C	
Cylinder Zone 4 Temp.	238 to 260	°C	
Adapter Temperature	246 to 260	°C	
Melt Temperature	246 to 260	°C	
Die Temperature	246 to 260	°C	
NOTE			
1.	0 Failures in Water		

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