Bynel® 41E871

Tuesday, November 5, 2019

DuPont Packaging & Industrial Polymers - Linear Low Density Polyethylene

General Information

Product Description

BYNEL® Series 4100 series resins are anhydride-modified, linear low-density polyethylene (LLDPE) resins. All BYNEL Series 4100 series resins are available in pellet form for use in conventional extrusion and coextrusion equipment designed to process polyethylene resins.

BYNEL 41E871 is a grade with a mediium-high level of anhydride modification, and is mainly intended for use as a component in a blend with other polyolefin resins.

Physical properties of BYNEL Series 4100 resins are typical of linear low-density polyethylene resins with similar density and melt index values. Use of these adhesive resins in coextruded PE/barrier structures offers improved thermal resistance over that of ethylene vinyl acetate-based adhesive resins.

Applications

BYNEL 4100 series resins adhere to a variety of materials. They are most often used to adhere to EVOH, polyamide, PE and ethylene copolymers.

Series 4100 resins can be used in coextrusion processes including:

- blown film
- cast film/sheet
- blow molding
- melt and solid phase thermoforming
- sheet and tubing

LLDPE resins are known for their temperature resistance, clarity and toughness, which make the 4100 series resins work well in applications such as:

- boil-in-bag structures
- blow molded containers in which drop strength is important
- bag-in-box films
- film where LLDPE is the heat seal layer.

General

Material Status	• Experimental: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Good Adhesion		
Uses	• Adhesives • Blending • Blow Molding Applications	• Cast Film • Film • Sheet	• Tubing
Agency Ratings	• FDA 21 CFR 175.105		
Forms	• Pellets		
Processing Method	• Blow Molding • Blown Film • Cast Film	• Coextrusion • Sheet Extrusion • Solid Phase Press. Form. Thermoforming	• Thermoforming

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.922		ASTM D792
Density	0.920	g/cm³	ISO 1183
Melt Mass-Flow Rate (190°C/2.16 kg)	1.8	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	1.8	g/10 min	ISO 1133

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Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	212	°F	ASTM D1525
Vicat Softening Temperature	212	°F	ISO 306
Peak Melting Temperature	250	°F	ASTM D3418
Melting Temperature (DSC)	250	°F	ISO 3146
Freezing Point	223	°F	ASTM D3418

Processing Information

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	320	°F
Cylinder Zone 2 Temp.	365	°F
Cylinder Zone 3 Temp.	455	°F
Cylinder Zone 4 Temp.	455	°F
Cylinder Zone 5 Temp.	455	°F
Adapter Temperature	455	°F
Melt Temperature	< 500	°F
Die Temperature	455	°F

Extrusion Notes

Processing conditions shown are for coextrusion with EVOH.
Processing conditions for coextrusion with nylon:
Zone 1: 160°C
Zone 2: 185°C
Zone 3: 235°C
Zone 4: 260°C
Zone 5: 260°C
Adapter: 260°C
Die: 260°C

Notes

[1] Typical properties: these are not to be construed as specifications.