



Bynel® 41E850

DuPont Packaging & Industrial Polymers - Linear Low Density Polyethylene

Tuesday, November 5, 2019

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.

Characteristics/Benefits

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. These physical properties 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 • 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	0.902		ASTM D792
Density	0.900	g/cm ³	ISO 1183
Melt Mass-Flow Rate (190°C/2.16 kg)	1.0	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	1.0	g/10 min	ISO 1133

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Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	190	°F	ASTM D1525
Vicat Softening Temperature	190	°F	ISO 306
Peak Melting Temperature	248	°F	ASTM D3418
Melting Temperature (DSC)	248	°F	ISO 3146
Freezing Point			
--	217	°F	ASTM D3418
--	217	°F	ISO 3146

Additional Information	Nominal Value	Unit
Maximum Processing Temperature	500	°F

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	410 to 428	°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: 250°C

Zone 5: 250°C

Adapter: 250°C

Die: 250°C

Notes

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