

Bynel® 4109

Linear Low Density Polyethylene
DuPont Packaging & Industrial Polymers

Message:

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 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 Information			
Features	Good adhesion		
Uses	Films		
	Blow molding applications		
	Pipe fittings		
	cast film		
	Sheet		
	Container		
	Adhesive		
Agency Ratings	FDA 21 CFR 175.105		
Forms	Particle		
Processing Method	Solid Phase Press. Form. Thermoforming		
	Blow molding		
	Co-extrusion molding		
	Extrusion		
	Thermoforming		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.920	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	3.1	g/10 min	ASTM D1238, ISO 1133
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	87.0	°C	ASTM D1525, ISO 306
Melting Temperature	126	°C	DSC, ISO 3146

Additional Information

The value listed as Melting Point, DSC, was tested in accordance with ASTM D3418. Freezing Point (DSC), ASTM D3418: 112°C

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	160	°C
Cylinder Zone 2 Temp.	185	°C
Cylinder Zone 3 Temp.	235	°C
Cylinder Zone 4 Temp.	235	°C
Cylinder Zone 5 Temp.	235	°C
Adapter Temperature	235	°C
Melt Temperature	< 260	°C
Die Temperature	235	°C

Extrusion instructions

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

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