

## DuPont Bynel® 4109 Anhydride-Modified LLDPE Adhesive Resin

Category : Polymer , Thermoplastic , Polyethylene (PE) , Anhydride-Modified Polyethylene , LLDPE

### Material Notes:

Bynel® Series 4100 resins are anhydride-modified, linear low-density polyethylene (LLDPE) resins. All 4100 Series resins are available in pellet form for use in conventional extrusion and coextrusion equipment designed to process polyethylene (PE) resins. Applications: Bynel® Series 4100 resins adhere to a variety of materials. They are most often used to adhere to EVOH, polyamide, PE, and ethylene copolymers. In addition, Bynel® 4107, 4109, 41E532, 41E556, 41E557, and 41E558 will also adhere to ionomers. 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 Bynel® 4105, 4109, and 41E557 can also be used in coextrusion coating. LLDPE resins are known for their temperature resistance, clarity and toughness. These physical properties make the Series 4100 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 Bynel® 4104, 4105, 4125, and 4164 provide good adhesion to EVOH and outstanding adhesion to polyamide. The primary difference between Bynel® 4104, 4105, and 4125 is their rheology. Bynel® 41E556 provides improved adhesion to EVOH and outstanding adhesion to polyamide. Bynel® 4107, 4109, 41E532, 41E557, and 41E558 provide outstanding adhesion to EVOH and polyamide. Bynel® 4107 has a low melt index, which makes it useful in blow molding and blown film processes. It provides less parison sag in blow molding and better bubble stability in blown film Bynel® 41E558 can also be used to adhere to polypropylene. In particular, Bynel® 41E532 and 41E558 provide outstanding adhesion to ionomers, particularly sodium ionomers in blown film. A potential application in a barrier/ionomer structure is oil pouches or sachets. They are also useful in cook-in applications. 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. The rheology characteristics of each grade are different, so one may be better suited than the others to a particular extrusion process. Information provided by DuPont Packaging Polymers.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_DuPont-Bynel-4109-Anhydride-Modified-LLDPE-Adhesive-Resin.php](http://www.lookpolymers.com/polymer_DuPont-Bynel-4109-Anhydride-Modified-LLDPE-Adhesive-Resin.php)

Physical Properties	Metric	English	Comments
Density	0.928 g/cc	0.0335 lb/in <sup>3</sup>	ASTM D792
Viscosity	1.00e+6 cP @Shear Rate 50.0 1/s, Temperature 190 °C	1.00e+6 cP @Shear Rate 50.0 1/s, Temperature 374 °F	estimated from log-log graph
Melt Flow	3.1 g/10 min @Load 2.16 kg, Temperature 190 °C	3.1 g/10 min @Load 4.76 lb, Temperature 374 °F	ASTM D1238

Thermal Properties	Metric	English	Comments
Melting Point	112 °C	234 °F	Freezing point via DSC/ASTM D3418
	130 °C	266 °F	Melting point via DSC/ASTM D3418
Vicat Softening Point	94.0 °C	201 °F	ASTM D1525

Processing Properties	Metric	English	Comments
Processing Temperature	235 °C	455 °F	Extruder forward zone and adapter for film or coating with EVA or EVOH
Nozzle Temperature	235 °C	455 °F	Die

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