

Bynel® 4033

High Density Polyethylene

DuPont Packaging & Industrial Polymers

Technical Data

Product Description

BYNEL® Series 4000 resins are anhydride-modified, high-density polyethylene resins. They are available in pellet form for use in conventional extrusion and coextrusion equipment designed to process polyethylene (PE) resins.

BYNEL 4033 is a grade with a higher level of anhydride modification, and is mainly intended for use as a component in a blend with other polyolefin resins. It is not intended for extrusion in its pure form in typical extrusions or coextrusions.

BYNEL Series 4000 resins are excellent moisture barriers and have a good hydrocarbon resistance. This unique combination of properties makes them useful in a variety of coextrusion applications. HDPE/EVOH tubing and HDPE/polyamide bottles for agricultural chemicals are two examples.

BYNEL 4000 series resins are most often used in coextrusion with EVA, EVOH, polyamide and PE.

General

Material Status	• Commercial: Active		
Literature ¹	• Technical Datasheet (English)		
Search for UL Yellow Card	• DuPont Packaging & Industrial Polymers		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America • South America
Features	• Hydrocarbon Resistant		
Uses	• Agricultural Applications • Blending	• Bottles • Tubing	
Agency Ratings	• FDA 21 CFR 175.105		
Forms	• Pellets		
Processing Method	• Coextrusion	• Extrusion	

Physical	Nominal Value Unit	Test Method
Specific Gravity	0.950 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	2.0 g/10 min	ASTM D1238 ISO 1133

Thermal	Nominal Value Unit	Test Method
Vicat Softening Temperature	128 °C	ASTM D1525 ISO 306
Peak Melting Temperature	135 °C	ASTM D3418 ISO 3146
Freezing Point	114 °C	ASTM D3418

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 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