DOW™ LDPE 4012

The Dow Chemical Company - Low Density Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

- A high melt index resin for thin coating applications
- Complies with U.S. FDA 21 CFR 177.1520 (c) 2.2.
- Complies with U.S. FDA-DMF
- Complies with Canadian HPFB No Objection (With Limitations)
- Complies with EU, No 10/2011
- Consult the regulations for complete details.

Polyethylene 4012 is used for a variety of applications such as condiment packaging, dry foods packaging, snack foods packaging, moist foods packaging, sugar pouches, lidding stock and medical packaging. DOW LDPE extrusion coating resins provide optimal neck-in and draw-down performance with minimal taste/odor contribution.

General			
Material Status	• Commercial: Active		
Availability	• Latin America	• North America	
Additive	• Antiblock: No	• Processing Aid: No	• Slip: No
Agency Ratings	• DMF Unspecified Rating • EU No 10/2011	• FDA 21 CFR 177.1520(c) 2.2 • HPFB (Canada) No Objection [1]	
Forms	• Pellets		
Processing Method	• Extrusion Coating		

ASTM & ISO Properties [2]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.920		ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	12	g/10 min	ASTM D1238
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Coefficient of Friction (vs. Itself - Dynamic)	0.60		ASTM D1894
Films	**Nominal Value**	**Unit**	**Test Method**
Seal Initiation Temperature [3]			
1.0 mil, Extrusion Coating	221	°F	
Water Vapor Transmission Rate [4]			ASTM F1249
1.0 mil, Extrusion Coating	1.8	g·mil/100in²/atm/24 hr	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Vicat Softening Temperature	192	°F	ASTM D1525
Melting Temperature (DSC)	225	°F	Internal Method

Processing Information

Extrusion	Nominal Value	Unit	Test Method
Melt Temperature	600 to 620	°F	
Maximum Line Speed	26.8	ft/sec	Internal Method
Minimum Coating Thickness	0.30	mil	Internal Method
Minimum Coating Weight	4.0	lb/ream	Internal Method
Neck-in (625°F, 1.0 mil)	1.9	in	Internal Method

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Extrusion Notes

Fabrication Conditions For Extrusion Coating Film:

- Screw Size: 3.5 in. (89 mm); 30:1 L/D
- Screw Type: Single Flight with Maddock Mixer
- Die Gap: 20 mil (0.508 mm)
- Melt Temperature: 625°F (329°C)
- Output: 250 lb/hr
- Screw Speed: 90 rpm
- Gauge: 1.0 mil (25µm)

Notes

[1] With limitations

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

[3] Coating onto 50 lb Kraft paper.
- Temperature at which 1 lb/in. (4.4 N/25.4 mm heat seal strength is achieved.
- Heat Seal Strengths, Topwave HT Tester 0.5 S dwell, 40 psi bar pressure, pull speed 150 mm/sec.

[4] Coating onto 50 lb Kraft paper.