



DOW™ 4012 Low Density

 OVERVIEW  PROPERTIES  **TECHNICAL CONTENT**

Technical Data Sheet

 Technical Data Sheet | English

Safety Data Sheet

 United States ▾

 Safety Data Sheet | United States | English

Regulatory Data Sheets

 Regulatory Data Sheets | English



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Polyethylene Resin



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DOW™ LDPE 4012

Low Density Polyethylene Resin

Overview

- 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.

Additive

- Antiblock: No
- Slip: No
- Processing Aid: No

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.918 g/cm ³	0.918 g/cm ³	ASTM D792
Base Density ¹	0.918 g/cm ³	0.918 g/cm ³	Dow Method
Melt Index (190°C/2.16 kg)	12 g/10 min	12 g/10 min	ASTM D1238
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Coefficient of Friction vs. Itself - Dynamic	0.60	0.60	ASTM D1894
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Seal Initiation Temperature ²			
1.0 mil (25 µm), Extrusion Coating	221 °F	105 °C	
Water Vapor Transmission Rate ³			ASTM F1249
1.0 mil (25 µm), Extrusion Coating	1.8 g·mil/100in ² /atm/24 hr	0.71 g·mm/m ² /atm/24 hr	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Vicat Softening Temperature	192 °F	88.9 °C	ASTM D1525
Melting Temperature (DSC)	225 °F	107 °C	Dow Method
Extrusion	Nominal Value (English)	Nominal Value (SI)	Test Method
Melt Temperature	600 to 620 °F	316 to 327 °C	
Maximum Line Speed	26.8 ft/sec	8.2 m/sec	Dow Method
Minimum Coating Thickness	0.30 mil	7.6 µm	Dow Method
Minimum Coating Weight	4.0 lb/ream	6.5 g/m ²	Dow Method
Neck-in (625°F (329°C), 1.0 mil (25.4 µm))	1.9 in	48.3 mm	Dow Method

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

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ Base density is estimated using the assumption that every 1000 ppm of antiblock in the finished product raises the density of the polymer by 0.0006 g/cm³. Base density is the estimated density of the polymer if it did not contain any antiblock.

² 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.
-

³ Coating onto 50 lb Kraft paper.

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