# 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/cm³ | 0.918 | g/cm³ | ASTM D792 |
| Base Density [1] | 0.918 | g/cm³ | 0.918 | g/cm³ | 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 | | | | | ASTM D1894 |
| vs. Itself - Dynamic | 0.60 | | 0.60 | | |
| **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/100in²/atm/24 hr | 0.71 | g·mm/m²/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/m² | 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.



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- 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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