

DOW™ LDPE 5004I

Low Density Polyethylene Resin

The Dow Chemical Company

Message:

Dow LDPE 5004I is used for fresh milk cartons, liquid/juice containers, dry foods packaging, snack foods packaging, moist foods packaging, and medical packaging. Dow LDPE extrusion coating resins provide optimal neck-in and draw-down performance with minimal taste/odor contribution.

A low melt index coating resin for demanding packaging applications

Complies with:

U.S. FDA 21 CFR 177.1520 (c) 2.2

U.S. FDA -DMF

Canadian HPFB No Objection (With Limitations)

EU, No 10/2011

Japan Hygienic Olefin and Styrene Plastics Association

Consult the regulations for complete details.

| General Information | | | |
|---|------------------------------|-------------------|-----------------|
| Agency Ratings | DMF not rated | | |
| | FDA 21 CFR 177.1520(c) 2.2 | | |
| | HPFB (Canada) No Objection 2 | | |
| | JHOSPA not rated | | |
| | Europe No 10/2011 | | |
| Forms | Particle | | |
| Processing Method | Extrusion coating | | |
| | cast film | | |
| Physical | Nominal Value | Unit | Test Method |
| Specific Gravity | 0.924 | g/cm ³ | ASTM D792 |
| Melt Mass-Flow Rate (MFR) (190°C/2.16 kg) | 4.2 | g/10 min | ASTM D1238 |
| Mechanical | Nominal Value | Unit | Test Method |
| Coefficient of Friction ¹ (with self-dynamic, extrusion coating) | 0.45 | | ASTM D1894 |
| Films | Nominal Value | Unit | Test Method |
| Film Thickness - Tested | 25 | µm | |
| Film Puncture Resistance (25 µm) | 2.32 | J/cm ³ | Internal method |
| Film strength | | | ASTM D882 |
| MD: 25 µm, cast film | 114 | J/cm ³ | ASTM D882 |
| TD: 25 µm, cast film | 145 | J/cm ³ | ASTM D882 |
| Tensile Strength | | | ASTM D882 |
| MD: Yield, 25 µm, extruded film | 14.8 | MPa | ASTM D882 |
| TD: Yield, 25 µm, extruded film | 10.9 | MPa | ASTM D882 |
| MD: Broken, 25 µm, extruded film | 31.0 | MPa | ASTM D882 |
| TD: Broken, 25 µm, extruded film | 17.0 | MPa | ASTM D882 |

| Tensile Elongation | | | ASTM D882 |
|---|---------------|--------------------------------|-----------------|
| MD: Broken, 25 µm, extruded film | 220 | % | ASTM D882 |
| TD: Broken, 25 µm, extruded film | 610 | % | ASTM D882 |
| Dart Drop Impact (25 µm, Cast Film) | 27 | g | ASTM D1709A |
| Elmendorf Tear Strength | | | ASTM D1922 |
| MD: 25 µm, cast film | 310 | g | ASTM D1922 |
| TD: 25 µm, cast film | 80 | g | ASTM D1922 |
| Seal Initiation Temperature ² (25 µm, Extrusion Coating) | 105 | °C | |
| Water Vapor Transmission Rate ³ (25 µm, Extrusion Coating) | 0.59 | g·mm/m ² /atm/24 hr | ASTM F1249 |
| Thermal | Nominal Value | Unit | Test Method |
| Vicat Softening Temperature | 95.0 | °C | ASTM D1525 |
| Melting Temperature (DSC) | 112 | °C | Internal method |
| Optical | Nominal Value | Unit | Test Method |
| Gloss (45, 25.4 µm, cast film) | 51 | | ASTM D2457 |
| Haze (25.4 µm, Cast Film) | 13 | % | ASTM D1003 |
| Extrusion | Nominal Value | Unit | Test Method |
| Melt Temperature | 316 - 327 | °C | |
| Neck-in (321°C, 25.4 µm) | 63.5 | mm | Internal method |
| Maximum production line speed | 7.6 | m/sec | Internal method |
| Minimum coating thickness | 7.6 | µm | Internal method |
| Minimum coating weight | 7.2 | g/m ² | Internal method |
| Extrusion instructions | | | |

铸造薄膜的制造条件:

螺杆 A,尺寸:2 英寸 (51 mm);30:1 L/D

熔体温度:502°F (261°C)

螺杆速度:33 rpm

螺杆 B,尺寸:2.5 英寸 (63.5 mm); 30:1 L/D

熔体温度:501°F (261°C)

螺杆速度:33 rpm

螺杆 C,尺寸:2.5 英寸 (63.5 mm);30:1 L/D

熔体温度:499°F (259°C)

螺杆速度:33 rpm

螺杆 D,尺寸:2.5 英寸 (63.5 mm);30:1 L/D

熔体温度:500°F (260°C)

螺杆速度:33 rpm

螺杆 E,尺寸:2 英寸 (51 mm);30:1 L/D

熔体温度:501°F (261°C)

螺杆速度:33 rpm

螺杆类型:DSB II

冷却辊温度:70°F (21°C)

生产线速度:400 fpm(123 米/分)

挤出涂层薄膜的制造条件:

螺杆尺寸:3.5 英寸 (89 mm) 30:1 L/D

螺杆类型:带 Maddock Mixer 的单跨型

模具间隙:20 密尔 (0.508 mm)

熔体温度:625°F (329°C)

输出:250 磅/小时

螺杆速度:90 rpm

厚度:1.0 密尔 (25 µm)

| NOTE | |
|------|---|
| 1. | 1.0 Mill (25 µm) coating applied to 50 pounds of kraft paper. |
| 2. | Apply the coating to 50 pounds of kraft paper. |
| 3. | Apply the coating to 50 pounds of kraft paper. |

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