



# DOWLEX™ 2045.11G

## Polyethylene Resin

### Overview

- For high speed, thin film applications
- Additional thermal stability
- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.2a.
- Complies with Canadian HPFB No Objection (With Limitations)
- Complies with EU, No 10/2011
- Consult the regulations for complete details.

### Additive

- Antiblock: 3000 ppm
- Slip: 1200 ppm
- Processing Aid: No

| Physical                    | Nominal Value (English)    | Nominal Value (SI)      | Test Method             |
|-----------------------------|----------------------------|-------------------------|-------------------------|
| Density                     | 0.922 g/cm <sup>3</sup>    | 0.922 g/cm <sup>3</sup> | ASTM D792               |
| Base Density                | 0.920 g/cm <sup>3</sup>    | 0.920 g/cm <sup>3</sup> | Dow Method <sup>1</sup> |
| Melt Index (190°C/2.16 kg)  | 1.0 g/10 min               | 1.0 g/10 min            | ASTM D1238              |
| Films                       | Nominal Value (English)    | Nominal Value (SI)      | Test Method             |
| Film Thickness - Tested     | 1.0 mil                    | 25 µm                   | Dow Method              |
| Film Puncture Energy        | 11.0 in·lb                 | 1.24 J                  | Dow Method              |
| Film Puncture Force         | 7.00 lbf                   | 31.1 N                  | Dow Method              |
| Film Puncture Resistance    | 75.0 ft·lb/in <sup>3</sup> | 6.21 J/cm <sup>3</sup>  | Dow Method              |
| Film Toughness              |                            |                         | ASTM D882               |
| MD                          | 1330 ft·lb/in <sup>3</sup> | 110 J/cm <sup>3</sup>   |                         |
| TD                          | 1370 ft·lb/in <sup>3</sup> | 114 J/cm <sup>3</sup>   |                         |
| Secant Modulus              |                            |                         | ASTM D882               |
| 1% Secant, MD               | 30600 psi                  | 211 MPa                 |                         |
| 2% Secant, MD               | 24900 psi                  | 172 MPa                 |                         |
| 1% Secant, TD               | 33900 psi                  | 234 MPa                 |                         |
| 2% Secant, TD               | 27400 psi                  | 189 MPa                 |                         |
| Tensile Strength            |                            |                         | ASTM D882               |
| MD : Yield                  | 1940 psi                   | 13.4 MPa                |                         |
| TD : Yield                  | 2050 psi                   | 14.1 MPa                |                         |
| MD : Break                  | 6690 psi                   | 46.1 MPa                |                         |
| TD : Break                  | 5120 psi                   | 35.3 MPa                |                         |
| Tensile Elongation          |                            |                         | ASTM D882               |
| MD : Break                  | 540 %                      | 540 %                   |                         |
| TD : Break                  | 660 %                      | 660 %                   |                         |
| Dart Drop Impact            | 180 g                      | 180 g                   | ASTM D1709A             |
| Elmendorf Tear Strength     |                            |                         | ASTM D1922              |
| MD                          | 440 g                      | 440 g                   |                         |
| TD                          | 630 g                      | 630 g                   |                         |
| Thermal                     | Nominal Value (English)    | Nominal Value (SI)      | Test Method             |
| Vicat Softening Temperature | 219 °F                     | 104 °C                  | ASTM D1525              |
| Melting Temperature (DSC)   | 252 °F                     | 122 °C                  | Dow Method              |
| Optical                     | Nominal Value (English)    | Nominal Value (SI)      | Test Method             |
| Gloss (45°)                 | 34                         | 34                      | ASTM D2457              |
| Haze                        | 20 %                       | 20 %                    | ASTM D1003              |
| Extrusion                   | Nominal Value (English)    | Nominal Value (SI)      |                         |
| Melt Temperature            | 420 °F                     | 216 °C                  |                         |

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**Extrusion Notes**

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## Fabrication Conditions For Blown Film:

- Screw Size: 3.5 in.
- Screw Type: DSB II
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 420°F
- Output: 12 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed 43.6 rpm
- Frost Line Height: 39 in.

**Notes**

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

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<sup>1</sup> 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/cm<sup>3</sup>. Base density is the estimated density of the polymer if it did not contain any antiblock.

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