



# ELITE™ 5100G

## Enhanced Polyethylene Resin

### Overview

- For industrial and consumer film applications
- Extremely high impact strength
- Low blocking tendencies for improved handling and convertibility

Complies with:

- U.S. FDA 21 CFR 177.1520 (c) 3.2a.
- Canadian HPFB No Objection
- Consult the regulations for complete details.

ELITE™ 5100G Enhanced Polyethylene Resin is a copolymer produced via INSITE™ Technology from Dow Plastics. It offers excellent impact strength, good tensile and puncture properties for thick and thin gauge industrial and consumer blown film applications. This resin exhibits higher hot tack strengths than LLDPE, making it ideal for automated packaging applications.

| Physical                                  | Nominal Value (English)   | Nominal Value (SI)      | Test Method             |
|---|---------------------------|-------------------------|-------------------------|
| Density                                   | 0.920 g/cm <sup>3</sup>   | 0.920 g/cm <sup>3</sup> | ASTM D792               |
| Melt Index (190°C/2.16 kg)                | 0.85 g/10 min             | 0.85 g/10 min           | ASTM D1238              |
| Films                                     | Nominal Value (English)   | Nominal Value (SI)      | Test Method             |
| Film Thickness - Tested                   | 2.00 mil                  | 50.8 µm                 |                         |
| Film Puncture Energy (2.00 mil (50.8 µm)) | 80.0 in·lb                | 9.04 J                  | Dow Method              |
| Film Puncture Force (2.00 mil (50.8 µm))  | 24.0 lbf                  | 107 N                   | Dow Method              |
| Film Puncture Resistance                  |                           |                         | Dow Method              |
| 2.00 mil (50.8 µm)                        | 249 ft·lb/in <sup>3</sup> | 20.6 J/cm <sup>3</sup>  |                         |
| Secant Modulus                            |                           |                         | ASTM D882               |
| 2% Secant, MD: 2.00 mil (50.8 µm)         | 32100 psi                 | 222 MPa                 |                         |
| 2% Secant, TD: 2.00 mil (50.8 µm)         | 37400 psi                 | 258 MPa                 |                         |
| Tensile Strength                          |                           |                         | ASTM D882               |
| MD: Yield, 2.00 mil (50.8 µm)             | 1710 psi                  | 11.8 MPa                |                         |
| TD: Yield, 2.00 mil (50.8 µm)             | 1810 psi                  | 12.5 MPa                |                         |
| MD: Break, 2.00 mil (50.8 µm)             | 8310 psi                  | 57.3 MPa                |                         |
| TD: Break, 2.00 mil (50.8 µm)             | 7760 psi                  | 53.5 MPa                |                         |
| Tensile Elongation                        |                           |                         | ASTM D882               |
| MD: Break, 2.00 mil (50.8 µm)             | 600 %                     | 600 %                   |                         |
| TD: Break, 2.00 mil (50.8 µm)             | 650 %                     | 650 %                   |                         |
| Dart Drop Impact (2.00 mil (50.8 µm))     | 780 g                     | 780 g                   | ASTM D1709B             |
| Elmendorf Tear Strength                   |                           |                         | ASTM D1922              |
| MD: 2.00 mil (50.8 µm)                    | 710 g                     | 710 g                   |                         |
| TD: 2.00 mil (50.8 µm)                    | 1000 g                    | 1000 g                  |                         |
| Seal Initiation Temperature               |                           |                         | Dow Method <sup>1</sup> |
| 2.00 mil (50.8 µm)                        | 223 °F                    | 106 °C                  |                         |
| Thermal                                   | Nominal Value (English)   | Nominal Value (SI)      | Test Method             |
| Vicat Softening Temperature               | 221 °F                    | 105 °C                  | ASTM D1525              |
| Melting Temperature (DSC)                 | 255 °F                    | 124 °C                  | Dow Method              |
| Optical                                   | Nominal Value (English)   | Nominal Value (SI)      | Test Method             |
| Gloss (45°, 2.00 mil (50.8 µm))           | 67                        | 67                      | ASTM D2457              |
| Haze (2.00 mil (50.8 µm))                 | 10 %                      | 10 %                    | 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: 2.5 in. (63.5mm); 24:1 L/D
- Screw Type: Barrier screw
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 420°F (216°C)
- Output: 6 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 45 rpm
- Frost Line Height: 25 in. (635 mm)

**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> Temperature at which 2 lb/in. (8.8 N/25.4 mm) heat seal strength is achieved.

J&B Automatic Heat Seal and Hot Tack Tester 0.5 S dwell, 40 psi bar pressure, Instron pull speed 1.0 in./min.

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