

# ATTANE™ 4201G

## Ultra Low Density Polyethylene Resin

### Overview

- For food packaging applications
- Offers toughness, seal properties, optical properties and processability

Complies with:

- U.S. FDA FCN 424
- Canadian HPFB No Objection (with Limitations)
- EU, No 10/2011
- Japan Hygienic Olefin and Styrene Plastics Association
- U.S. FDA-DMF

Consult the regulations for complete details.

### Additive

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

| Physical                                   | Nominal Value (English)   | Nominal Value (SI)      | Test Method |
|--------------------------------------------|---------------------------|-------------------------|-------------|
| Density                                    | 0.912 g/cm <sup>3</sup>   | 0.912 g/cm <sup>3</sup> | ASTM D792   |
| Base Density <sup>1</sup>                  | 0.912 g/cm <sup>3</sup>   | 0.912 g/cm <sup>3</sup> | Dow Method  |
| 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 Puncture Resistance (1.0 mil (25 µm)) | 380 ft·lb/in <sup>3</sup> | 31.4 J/cm <sup>3</sup>  | Dow Method  |
| Secant Modulus                             |                           |                         | ASTM D882   |
| 2% Secant, MD : 1.0 mil (25 µm)            | 20000 psi                 | 138 MPa                 |             |
| 2% Secant, TD : 1.0 mil (25 µm)            | 20500 psi                 | 141 MPa                 |             |
| Tensile Strength                           |                           |                         | ASTM D882   |
| MD : Yield, 1.0 mil (25 µm)                | 1460 psi                  | 10.1 MPa                |             |
| TD : Yield, 1.0 mil (25 µm)                | 1310 psi                  | 9.03 MPa                |             |
| MD : Break, 1.0 mil (25 µm)                | 5580 psi                  | 38.5 MPa                |             |
| TD : Break, 1.0 mil (25 µm)                | 4990 psi                  | 34.4 MPa                |             |
| Tensile Elongation                         |                           |                         | ASTM D882   |
| MD : Break, 1.0 mil (25 µm)                | 520 %                     | 520 %                   |             |
| TD : Break, 1.0 mil (25 µm)                | 710 %                     | 710 %                   |             |
| Dart Drop Impact (1.0 mil (25 µm))         | 870 g                     | 870 g                   | ASTM D1709B |
| Elmendorf Tear Strength                    |                           |                         | ASTM D1922  |
| MD : 1.0 mil (25 µm)                       | 370 g                     | 370 g                   |             |
| TD : 1.0 mil (25 µm)                       | 590 g                     | 590 g                   |             |
| Thermal                                    | Nominal Value (English)   | Nominal Value (SI)      | Test Method |
| Vicat Softening Temperature                | 199 °F                    | 92.8 °C                 | ASTM D1525  |
| Melting Temperature (DSC)                  | 253 °F                    | 123 °C                  | Dow Method  |
| Optical                                    | Nominal Value (English)   | Nominal Value (SI)      | Test Method |
| Gloss (45°, 1.00 mil (25.4 µm))            | 33                        | 33                      | ASTM D2457  |
| Haze <sup>2</sup> (1.00 mil (25.4 µm))     | 1.70 %                    | 1.70 %                  | ASTM D1003  |



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## Extrusion Notes

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### Fabrication Conditions For Blown Film:

- Screw Size: 3.5 in.
- Screw Type: DBS II
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 411°F (211°C)
- Output: 10 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 259 rpm
- Frost Line Height: 53 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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<sup>2</sup> Internal

