



Technical Data Sheet

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.

Additive

- Antiblock: No
- Slip: No
- Processing aid: No

Properties

| Physical | Nominal Value | Unit (English) | Nominal Value | Unit (SI) | Test Method ¹ |
|----------------------------|---------------|-----------------------|---------------|-------------------|--------------------------|
| Density | 0.920 | g/cm ³ | 0.920 | g/cm ³ | ASTM D792 |
| Base Density ² | 0.920 | g/cm ³ | 0.920 | g/cm ³ | Dow Method |
| Melt Index (190°C/2.16 kg) | 0.85 | g/10 min | 0.85 | g/10 min | ASTM D1238 |
| Films | | | | | |
| Film Thickness - Tested | 1 | mil | 25 | µm | |
| Film Puncture Energy | 51.0 | in·lb | 5.76 | J | Dow Method |
| Film Puncture Force | 14.5 | lbf | 64.5 | N | Dow Method |
| Film Puncture Resistance | 342 | ft·lb/in ³ | 28.3 | J/cm ³ | Dow Method |
| Film Toughness | | | | | ASTM 882 |
| MD | 1190 | ft·lb/in ³ | 98.5 | J/cm ³ | |
| TD | 1190 | ft·lb/in ³ | 98.5 | J/cm ³ | |

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Properties (Cont.)

| Films | Nominal Value | Unit (English) | Nominal Value | Unit (SI) | Test Method |
|--|---------------|----------------|---------------|-----------|-------------|
| Secant Modulus | | | | | ASTM 882 |
| 1% Secant, MD | 39400 | psi | 272 | MPa | |
| 2% Secant, MD | 33500 | psi | 231 | MPa | |
| 1% Secant, TD | 44900 | psi | 309 | MPa | |
| 2% Secant, TD | 37200 | psi | 256 | MPa | |
| Tensile Strength | | | | | ASTM 882 |
| MD: Yield | 1720 | psi | 11.9 | MPa | |
| TD: Yield | 1800 | psi | 12.4 | MPa | |
| MD: Break | 6330 | psi | 43.6 | MPa | |
| TD: Break | 5220 | psi | 36.0 | MPa | |
| Tensile Elongation | | | | | ASTM 882 |
| MD: Break | 480 | % | 480 | % | |
| TD: Break | 620 | % | 620 | % | |
| Dart Drop Impact | 540 | g | 540 | g | ASTM D1709A |
| Elmendorf Tear Strength | | | | | ASTM D1922 |
| MD | 260 | g | 260 | g | |
| TD | 670 | g | 670 | g | |
| Thermal | | | | | |
| Vicat Softening Temperature | 223 | °F | 106 | °C | ASTM D1525 |
| Melting Temperature (DSC) | 253 | °F | 123 | °C | Dow Method |
| Optical | | | | | |
| Gloss (45°) | 33 | | 33 | | ASTM D2457 |
| Haze | 20.0 | % | 20.0 | % | ASTM D1003 |
| Extrusion Notes | | | | | |
| Fabrication Conditions for Blown Film: | | | | | |
| <ul style="list-style-type: none"> • Screw Size: 3.5 in. • Screw Type: DSB II • Die Gap: 70 mil (1.8 mm) • Melt Temperature: 413°F • Output: 12 lb/hr/in. of die circumference • Die Diameter: 8 in. • Blow-up Ratio: 2.5:1 • Screw Speed: 40 rpm • Frost Line Height: 37 in. | | | | | |

