



Technical Data Sheet

INNATE™ ST50 Precision Packaging Resin

Overview

INNATE™ ST50 Precision Packaging Resin is designed for exceptional abuse performance. It offers a unique combination of high stiffness with excellent toughness which enables excellent performance on automated packaging equipment. This product also delivers robust processability..

Sustainability Attribute:



Complies with:

- Europe Commission Regulation (EU) No 10/2011
- U.S. FDA FCN 424
- JHOSPA (Japan Hygienic Olefin and Styrene Plastics Association)

Consult the regulations for complete details.

Properties

| Physical | Nominal Value | Unit (English) | Nominal Value | Unit (SI) | Test Method ¹ |
|----------------------------|---------------|-----------------------|---------------|-------------------|--------------------------|
| Density | 0.918 | g/cm ³ | 0.918 | g/cm ³ | ASTM D792 |
| Melt Index (190°C/2.16 kg) | 0.85 | g/10 min | 0.85 | g/10 min | ASTM D1238 |
| Films | | | | | |
| Film Thickness - Tested | 2 | mil | 51 | µm | |
| Film Puncture Energy | 81.0 | in•lb | 9.15 | J | |
| Film Puncture Force | 23.5 | lbf | 105 | N | |
| Film Puncture Resistance | 272 | ft-lb/in ³ | 22.5 | J/cm ³ | |
| Secant Modulus | | | | | ASTM D882 |
| 2% Secant, MD | 28500 | psi | 196 | MPa | |
| 2% Secant, TD | 33400 | psi | 230 | MPa | |
| Tensile Strength | | | | | ASTM D882 |
| MD : Yield | 1470 | psi | 10.1 | MPa | |
| TD : Yield | 1570 | psi | 10.8 | MPa | |
| MD : Break | 7500 | psi | 51.7 | MPa | |
| TD : Break | 7350 | psi | 50.6 | MPa | |
| Tensile Elongation | | | | | ASTM D882 |
| MD : Break | 570 | % | 570 | % | |
| TD : Break | 660 | % | 660 | % | |

1. ASTM: American Society for Testing and Materials

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

Properties

| Films | Nominal Value | Unit (English) | Nominal Value | Unit (SI) | Test Method ¹ |
|-------------------------------|---------------|----------------|---------------|-----------|--------------------------|
| Dart Drop Impact ² | 1900 | g | 1900 | g | ASTM D1709 |
| Elmendorf Tear Strength | | | | | ASTM D1922 |
| MD | 570 | g | 570 | g | |
| TD | 940 | g | 940 | g | |
| Thermal | | | | | |
| Vicat Softening Temperature | 219 | °F | 104 | °C | ASTM D1525 |
| Melting Temperature (DSC) | 255 | °F | 124 | °C | Dow Method |
| Optical | | | | | |
| Gloss (45°) | 51 | | 51 | | ASTM D2457 |
| Haze | 15.0 | % | 15.0 | % | ASTM D1003 |

Additional Information

Fabrication Conditions for 2 mil monolayer blown film at 100%:

- Die Diameter: 8 in.
- Screw Type: DSB II
- Die Gap: 90 mil
- Melt Temperature: 432°F
- Output: 10.34 lb/hr/in. of die circumference
- Screw Size: 3.5 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 36 rpm
- Frost Line Height: 40 in.

2. Method A

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