



INNATE™ ST50 Precision Packaging Resin

The Dow Chemical Company - Precision Packaging Resin

Tuesday, November 5, 2019

General Information

Product Description

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.

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

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Latin America	
	• Europe	• North America	
Agency Ratings	• EU 2011/10/EC	• FDA FCN 424	• JHOSPA Unspecified Rating
Forms	• Pellets		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.920		ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	0.85	g/10 min	ASTM D1238
Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	2	mil	
Film Puncture Energy	81.0	in-lb	
Film Puncture Force	23.5	lbf	
Film Puncture Resistance	272	ft-lb/in ³	
Secant Modulus - 2% Secant, MD	28500	psi	ASTM D882
Secant Modulus - 2% Secant, TD	33400	psi	ASTM D882
Tensile Strength - MD (Yield)	1470	psi	ASTM D882
Tensile Strength - TD (Yield)	1570	psi	ASTM D882
Tensile Strength - MD (Break)	7500	psi	ASTM D882
Tensile Strength - TD (Break)	7350	psi	ASTM D882
Tensile Elongation - MD (Break)	570	%	ASTM D882
Tensile Elongation - TD (Break)	660	%	ASTM D882
Dart Drop Impact ²	1900	g	ASTM D1709
Elmendorf Tear Strength - MD	570	g	ASTM D1922
Elmendorf Tear Strength - TD	940	g	ASTM D1922
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	219	°F	ASTM D1525
Melting Temperature (DSC)	255	°F	Internal Method
Optical	Nominal Value	Unit	Test Method
Gloss (45°)	51		ASTM D2457
Haze	15.0	%	ASTM D1003

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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.

Notes

¹ Typical properties: these are not to be construed as specifications.

² Method A
