TUFLIN™ HS-7072 NT 7

The Dow Chemical Company - Medium Density Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

TUFLIN™ HS-7072 NT 7 Medium Density Polyethylene Resin is a high melt strength resin designed for use in a variety of blown film applications where excellent processability and stiffness are needed.

For example, TUFLIN™ HS-7072 NT 7 provides:

- Outstanding performance in collation shrink films, giving a balance of shrink, stiffness, and toughness that provides excellent shrink tunnel and package performance.
- Stiffness and excellent performance in overwrap films.

Complies with:

- U.S. FDA 21 CFR 177.1520(c)3.1a
- CANADIAN HPFB NO OBJECTION (WITH LIMITATIONS)

Consult the regulations for complete details.

General			
Material Status	• Commercial: Active		
Availability	• North America		
Additive	• Antiblock: No	• Processing Aid: No	• Slip: No
Agency Ratings	• FDA 21 CFR 177.1520(c) 3.1a	• HPFB (Canada) No Objection	
Forms	• Pellets		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	0.937	g/cm³	ASTM D972
Melt Mass-Flow Rate (190°C/2.16 kg)	0.32	g/10 min	ASTM D1238
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	1	mil	
Film Puncture Energy (1.0 mil)	6.80	in·lb	
Film Puncture Force (1.0 mil)	6.40	lbf	
Film Puncture Resistance (1.0 mil)	46.5	ft·lb/in³	
Secant Modulus			ASTM D882
1% Secant, MD : 1.0 mil	88000	psi	
2% Secant, MD : 1.0 mil	80000	psi	
Secant Modulus			ASTM D882
1% Secant, TD : 1.0 mil	127000	psi	
2% Secant, TD : 1.0 mil	108000	psi	
Tensile Strength - MD (Yield, 1.0 mil)	3200	psi	ASTM D882
Tensile Strength - TD (Yield, 1.0 mil)	3600	psi	ASTM D882
Tensile Strength - MD (Break, 1.0 mil)	7300	psi	ASTM D882
Tensile Strength - TD (Break, 1.0 mil)	4000	psi	ASTM D882
Tensile Elongation - MD (Break, 1.0 mil)	420	%	ASTM D882
Tensile Elongation - TD (Break, 1.0 mil)	650	%	ASTM D882
Dart Drop Impact (1.0 mil)	< 50	g	ASTM D1709
Elmendorf Tear Strength - MD (1.0 mil)	16	g	ASTM D1922
Elmendorf Tear Strength - TD (1.0 mil)	1200	g	ASTM D1922

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Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	245	°F	ISO 306
Melting Temperature (DSC)	257	°F	Internal Method
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss (45°, 1.00 mil)	21		ASTM D2457
Haze (1.00 mil)	35.0	%	ASTM D1003

Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	443	°F

Extrusion Notes

Fabrication Conditions for 1 mil monolayer blown film at 100%

- Die Diameter: 8 in.
- Screw Type: DSB II
- Die Gap: 70 mil
- Melt Temperature: 443 °F
- Output: 12 lb/hr/in. of die circumference
- Screw Size: 3.5 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 55 rpm
- Frost Line Height: 37 in.
- 800 ppm of polymer processing aid was added during film fabrication

Notes

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