Technical Data Sheet

TUFLIN™ HS-7023 NT 7 Linear Low Density Polyethylene Resin

Description

TUFLIN™ HS-7023 NT 7 Linear Low Density Polyethylene Resin is an ethylene-hexene copolymer, linear low density (LLDPE) resin designed for good strength and processability. This resin is formulated with an additive package that does not contain any intentionally added TNPP (TrisnonylphenylPhosphite). This product is recommended for general purpose packaging applications from thick gauge, heavy duty bags to high speed thin gauge applications.

Main Characteristics

- Hexene linear low density resin
- General purpose resin
- Excellent strength
- An additive present in this product limits use only in film form for food contact applications

Complies with

- U.S. FDA 21 CFR 177.1520 (C) 3.1a (with Restrictions)
- U.S. FDA FCN 1539 (see notes)
- EU, No 10/2011

Consult the regulations for complete details.

Additive

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

Notes: An additive present in this product limits use only in film form for food contact applications. When used unmodified for food contact applications, this resin will comply with the U.S. Food and Drug Administration as a food contact substance (FCN) as a result of a premarket notification with an effective date of June 19, 2015 under FCN 1539. This notification allows for use of this product as articles or components of articles used in contact with all food types under Conditions of Use A through H, with the exception of infant formula or human breast milk, as described in Table 2 of U.S. FDA CFSAN/Office of Food Additive Safety April 2006, "Definitions of Food Types and Conditions of Use for Food Contact Substances". The preceding statement refers to regulatory requirements only, not to the product's physical utility. It is the responsibility of the article producer or food packager to determine that the article is suitable for its intended use.

Properties[1]

Physical	Nominal Value	Unit	Test Method[2]
Density	0.918	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) 190°C/2.16 kg)	1.0	g/10 min	ASTM D1238
Films			
Film Thickness - Tested	25	µm	
Film Puncture Energy	4.52	J	Internal Method
Film Puncture Force	48.9	N	Internal Method

1. Typical properties: these are not to be construed as specifications. Users should confirm results by their own tests.
2. ASTM: American Society for Testing and Materials

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Properties (Cont.)

Films	Nominal Value	Unit	Test Method
Film Puncture Resistance	24.8	J/cm³	Internal Method
Film Toughness			ASTM D882
MD	82.7	J/cm³	
TD	82.7	J/cm³	
Secant Modulus			ASTM D882
1% Secant, MD	262	MPa	
1% Secant, TD	255	MPa	
2% Secant, MD	214	MPa	
2% Secant, TD	214	MPa	
Tensile Strength			ASTM D882
MD: Yield	12.1	MPa	
TD: Yield	11.7	MPa	
MD: Break	37.9	MPa	
TD: Break	37.9	MPa	
Tensile Elongation			ASTM D882
MD: Break	500	%	
TD: Break	500	%	
Dart Drop Impact	200	g	ASTM D1709A
Elmendorf Tear Strength			ASTM D1922
MD[3]	380		
TD[3]	600		
Thermal			
Vicat Softening Temperature	109	°C	ASTM D1525
Melting Temperature (DSC)	124	°C	Internal Method
Optical			
Gloss (45°)	34		ASTM D2457
Haze	18.0	%	ASTM D1003
Extrusion Notes			

Fabrication Conditions for Blown Film:

- Screw Size: 3.5 in.
- Screw Type: DSBII
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 415°F
- Output: 12 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 39 rpm
- Frost Line Height: 57 in.

3. Method B.

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