

## Dow TUFLIN™ HS-7041 NT 7 Linear Low Density Polyethylene Resin

Category : Polymer , Film , Thermoplastic , Polyethylene (PE) , LLDPE

### Material Notes:

Hexene Linear Low Density Resin Good Strength High Output Complies with U.S. FDA 21 CFR 177.1520 (c) 3.1a (with Restrictions) TUFLIN™ HS-7041 NT 7 is a half melt, ethylene-hexene copolymer, designed for good strength and throughput rates. This product is recommended for thin and thick gauge applications such as consumer trash bags/liners and heavy duty shipping sacks that require toughness and output. Information provided by Dow

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Dow-TUFLIN-HS-7041-NT-7-Linear-Low-Density-Polyethylene-Resin.php](http://www.lookpolymers.com/polymer_Dow-TUFLIN-HS-7041-NT-7-Linear-Low-Density-Polyethylene-Resin.php)

| Physical Properties | Metric                                                | English                                               | Comments   |
|---------------------|-------------------------------------------------------|-------------------------------------------------------|------------|
| Density             | 0.932 g/cc                                            | 0.0337 lb/in <sup>3</sup>                             | ASTM D792  |
| Thickness           | 50.8 microns                                          | 2.00 mil                                              |            |
| Melt Flow           | 0.50 g/10 min<br>@Load 2.16 kg,<br>Temperature 190 °C | 0.50 g/10 min<br>@Load 4.76 lb,<br>Temperature 374 °F | ASTM D1238 |
| Antiblock Level     | 3500 ppm                                              | 3500 ppm                                              |            |
| Slip Level          | 1200 ppm                                              | 1200 ppm                                              |            |

| Mechanical Properties              | Metric     | English    | Comments                                                 |
|------------------------------------|------------|------------|----------------------------------------------------------|
| Film Tensile Strength at Yield, MD | 16.77 MPa  | 2433 psi   | ASTM D882                                                |
| Film Tensile Strength at Yield, TD | 17.5 MPa   | 2540 psi   | ASTM D882                                                |
| Film Elongation at Break, MD       | 760 %      | 760 %      | ASTM D882                                                |
| Film Elongation at Break, TD       | 806 %      | 806 %      | ASTM D882                                                |
| Secant Modulus, MD                 | 0.3124 GPa | 45.32 ksi  | 2% Secant; ASTM D882                                     |
| Secant Modulus, TD                 | 0.3128 GPa | 45.37 ksi  | 2% Secant; ASTM D882                                     |
| Impact                             | 16         | 16         | [lb<sub>f</sub>]; Puncture Resistance Force; Dow Method  |
|                                    | 103        | 103        | [ft-lbf/in<sup>3</sup>]; Puncture Resistance; Dow Method |
|                                    | 4414       | 4414       | [ft-lbf/in<sup>3</sup>]; Toughness TD; ASTM D882         |
|                                    | 4427       | 4427       | [ft-lbf/in<sup>3</sup>]; Toughness MD; ASTM D882         |
| Puncture Energy                    | 3.62 J     | 2.67 ft-lb | Dow Method                                               |

| Mechanical Properties                     | Metric         | English     | Comments                                                                                             |
|-------------------------------------------|----------------|-------------|------------------------------------------------------------------------------------------------------|
| Elmendorf Tear Strength TD                | 1129 g         | 1129 g      | Method B; ASTM D1922                                                                                 |
| Elmendorf Tear Strength, MD               | 13.1 g/micron  | 333 g/mil   | ASTM D1922                                                                                           |
| Elmendorf Tear Strength, TD               | 22.22 g/micron | 564.5 g/mil | ASTM D1922                                                                                           |
| Dart Drop Test                            | 106 g          | 0.234 lb    | Method A; ASTM D1709                                                                                 |
|                                           | 112 g          | 0.247 lb    | Method B; ASTM D1709                                                                                 |
| Film Tensile Strength at Break, MD        | 58.82 MPa      | 8531 psi    | ASTM D882                                                                                            |
| Film Tensile Strength at Break, TD        | 52.23 MPa      | 7576 psi    | ASTM D882                                                                                            |
| Heat Seal Strength, Ultimate              | 23.5 N         | 5.28 lb (f) | at 160°C, 0.5 sec dwell, 40 psi bar pressure, pull speed 10 (in./min.); Dow Method                   |
| Heat Seal Strength Initiation Temperature | 130 °C         | 266 °F      | 1 lb/in heat seal strength; 0.5 sec dwell, 40 psi bar pressure, pull speed 10 (in./min.); Dow Method |

| Thermal Properties    | Metric | English | Comments         |
|-----------------------|--------|---------|------------------|
| Melting Point         | 126 °C | 259 °F  | Dow Method (DSC) |
| Vicat Softening Point | 119 °C | 246 °F  | ASTM D1525       |

| Optical Properties | Metric | English | Comments        |
|--------------------|--------|---------|-----------------|
| Haze               | 17 %   | 17 %    | ASTM D1003      |
| Gloss              | 41 %   | 41 %    | 20°; ASTM D2457 |
|                    | 49 %   | 49 %    | 45°; ASTM D2457 |

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