Technical Data Sheet

# DOW™ LLDPE DFDC-7047 NT 7 Linear Low Density Polyethylene

## Overview

DOW™ DFDC-7047 NT7 Linear Low Density Polyethylene is an ethylene-butene copolymer designed for blown film applications.

## Main Characteristics

- Butene linear low density polyethylene
- Blown film extrusion
- Pellet form
- Non-TNPP (Tris(nonylphenyl) phosphite) based formulation

## Complies with

- EU, No 10/2011
- U.S. FDA, 21 CFR 177.1520(c)3.2a

Consult the regulations for complete details.

## Typical Properties[1]

| Physical | Nominal Value (SI) | Unit | Test Method[2] |
|---|---|---|---|
| Density | 0.918 | g/cm³ | ASTM D792 |
| Melt Mass-Flow Rate (MFR) (230°C/2.16 kg) | 1.0 | g/10 min | ASTM D1238 |
| **Films** | | | |
| Film Thickness-Tested | 25 | µm | Internal Method |
| Film Puncture Energy | 2.49 | J | Internal Method |
| Film Puncture Force | 35.6 | N | Internal Method |
| Film Puncture Resistance | 12.0 | J/cm³ | ASTM D882 |
| Film Toughness - MD | 96.8 | J/cm³ | ASTM D882 |
| Film Toughness - TD | 95.1 | J/cm³ | ASTM D882 |
| Secant Modulus | | | |
| 1% Secant, MD | 221 | MPa | |
| 2% Secant, MD | 189 | MPa | |
| Secant Modulus | | | ASTM D882 |
| 1% Secant, TD | 248 | MPa | |
| 2% Secant, TD | 210 | MPa | |
| Tensile Strength - MD (Yield) | 10.7 | MPa | ASTM D882 |
| Tensile Strength - TD (Yield) | 11.0 | MPa | ASTM D882 |

## Typical Properties (Cont.)

| Films | Nominal Value (SI) | Unit | Test Method |
|---|---|---|---|
| Tensile Strength - MD (Break) | 36.5 | MPa | ASTM D882 |
| Tensile Strength - TD (Break) | 26.9 | MPa | ASTM D882 |
| Tensile Elongation - MD (Break) | 580 | % | ASTM D882 |
| Tensile Elongation - TD (Break) | 690 | % | ASTM D882 |
| Dart Drop Impact | 90 | g | ASTM D1709A |
| Elmendorf Tear Strength – MD[3] | 170 | g | ASTM D1922 |
| Elmendorf Tear Strength – TD[3] | 320 | g | ASTM D1922 |
| **Thermal** | | | |
| Melting Temperature | 121 | °C | ISO[4] 3146 |
| Vicat Softening Temperature | 102 | °C | ASTM D1525 |
| **Optical** | | | |
| Gloss (45°) | 33 | | ASTM D2457 |
| Haze | 19.0 | % | ASTM D1003 |

3. Method B
4. ISO: International Standardization Organization

## Extrusion Notes

Fabrication Conditions for Blown Film:

- Screw Size: 3.5in.; 30:1ratio L/D
- Screw Type: DSB II
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 420°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: 51 in.