

DuPont™ Surlyn® 3D7000FL NC010

High Performance Material for 3D Printing

Developmental Data

Product Information

Surlyn® 3D7000FL NC010 is an ethylene copolymer material in filament form for fused filament fabrication.

| Material Specific Properties | Value | Unit | Test Standard |
|--|-------|-------------------|----------------|
| Density | 0.95 | g/cm ³ | ISO 1183 |
| Melting Temperature, 10°C/min | 90 | °C | ISO 11357-1/-3 |
| Vicat Softening Temperature, 50°C/h, 10N | 65 | °C | ISO 306 |

| Typical Properties - Printed Parts | Flat | Edge | Vertical | Unit | Test Standard |
|------------------------------------|----------|----------|----------|-------------------|-------------------|
| Tensile Stress at Break | 18 | 15 | 10 | MPa | ISO 527 (Type 1A) |
| Tensile Strain at Break | 270 | 180 | 70 | % | ISO 527 (Type 1A) |
| Tensile Modulus | 120 | 140 | 180 | MPa | ISO 527 (Type1A) |
| Flexural Modulus | 115 | 150 | 115 | MPa | ISO 178 |
| Izod Impact - Notched | No Break | No Break | No Break | kJ/m ² | ISO 180/1A |
| Izod Impact - Unnotched | No Break | No Break | No Break | kJ/m ² | ISO 180/1U |

The above data are for the developmental sample and are subject to change.

DuPont Surlyn® 3D7000FL NC010 is capable of being printed on a variety of printers in a variety of configurations. Different printers, slicing and/or printing configurations, test conditions, ambient environments, etc. may give different results.

All printed specimens were created using an indirect-drive extruder equipped with a 0.4 mm nozzle. The filament was dried under vacuum at 60°C for >24 h prior to use. The printer settings were as follows: Nozzle Temperature: 210°C; Bed Temperature: 60°C; Printing Speed: 15 mm/sec; Cooling Fan: 100%; Infill: 100% Diagonal Line; Flow: 100%; Cooling Fan: 100% (off for first layer).

Test specimens were conditioned for 12 h at 60°C and then for >40 h at 23°C and 50% relative humidity prior to testing. The tests were then run under the latter conditions.

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