# Vectra® E840i LDS

## Celanese Corporation - Liquid Crystal Polymer

Sunday, November 3, 2019

### General Information

**Product Description**

40% Mineral filled Laser Direct Structuring grade. Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant UL-Listing V-0 in black at 1.5mm thickness per UL 94 flame testing. UL = Underwriters Laboratories (USA)

| General | | | |
|---|---|---|---|
| Material Status | • Commercial: Active | | |
| Availability | • Africa & Middle East<br>• Asia Pacific | • Europe<br>• Latin America | • North America |
| Filler / Reinforcement | • Mineral, 40% Filler by Weight | | |
| Features | • Flame Retardant | | |
| RoHS Compliance | • Contact Manufacturer | | |
| Resin ID (ISO 1043) | • LCP | | |

### ASTM & ISO Properties [1]

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Density | 1.81 | g/cm³ | ISO 1183 |
| Molding Shrinkage | | | ISO 294-4 |
| Across Flow | 0.50 | % | |
| Flow | 0.10 | % | |
| Water Absorption (Saturation, 73°F) | 0.011 | % | ISO 62 |
| Water Absorption (Equilibrium, 73°F, 50% RH) | 4.0E-3 | % | ISO 62 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | 1.35E+6 | psi | ISO 527-2/1A |
| Tensile Stress (Break) | 14800 | psi | ISO 527-2/1A/5 |
| Tensile Strain (Break) | 3.4 | % | ISO 527-2/1A/5 |
| Flexural Modulus (73°F) | 1.52E+6 | psi | ISO 178 |
| Flexural Stress (73°F) | 15800 | psi | ISO 178 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Charpy Notched Impact Strength (73°F) | 2.4 | ft·lb/in² | ISO 179/1eA |
| Notched Izod Impact Strength (73°F) | 2.9 | ft·lb/in² | ISO 180/1A |
| Unnotched Izod Impact Strength (73°F) | 16 | ft·lb/in² | ISO 180/1U |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| Heat Deflection Temperature (264 psi, Unannealed) | 441 | °F | ISO 75-2/A |
| Melting Temperature [2] | 635 | °F | ISO 11357-3 |
| CLTE - Flow | 6.7E-6 | in/in/°F | ISO 11359-2 |
| CLTE - Transverse | 1.5E-5 | in/in/°F | ISO 11359-2 |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Surface Resistivity | 2.0E+16 | ohms | IEC 60093 |
| Volume Resistivity | 2.0E+16 | ohms·cm | IEC 60093 |
| Electric Strength | 710 | V/mil | IEC 60243-1 |
| Relative Permittivity (100 Hz) | 4.97 | | IEC 60250 |
| Dissipation Factor (100 Hz) | 0.029 | | IEC 60250 |

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| Processing Information | | |
|---|---|---|
| **Injection** | **Nominal Value** | **Unit** |
| Drying Temperature | 302 | °F |
| Drying Time | 6.0 | hr |
| Suggested Max Moisture | 0.010 | % |
| Hopper Temperature | 68 to 86 | °F |
| Rear Temperature | 599 to 617 | °F |
| Middle Temperature | 608 to 626 | °F |
| Front Temperature | 617 to 635 | °F |
| Nozzle Temperature | 644 to 662 | °F |
| Processing (Melt) Temp | 644 to 662 | °F |
| Mold Temperature | 176 to 248 | °F |
| Injection Rate | Moderate | |

**Injection Notes**

Feeding zone temperature: 60 to 80°C
Zone4 temperature: 335 to 345°C
Hot runner temperature: 340 to 350°C

### Notes

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

[2] 10°C/min