



## Vectra® E440i

Celanese Corporation - Liquid Crystal Polymer

Sunday, November 3, 2019

### General Information

#### Product Description

Mineral and glass filled grade with low warp, easy flow and smooth surface appearance. Chemical abbreviation according to ISO 1043-1 : LCP  
Inherently flame retardant. FDA compliant

#### General

|                        |                                          |                                        |                 |
|------------------------|------------------------------------------|----------------------------------------|-----------------|
| Material Status        | • Commercial: Active                     |                                        |                 |
| Availability           | • Africa & Middle East<br>• Asia Pacific | • Europe<br>• Latin America            | • North America |
| Filler / Reinforcement | • Glass\Mineral                          |                                        |                 |
| Features               | • Flame Retardant<br>• Good Flow         | • Good Surface Finish<br>• Low Warpage |                 |
| Agency Ratings         | • FDA Unspecified Rating                 |                                        |                 |
| RoHS Compliance        | • Contact Manufacturer                   |                                        |                 |
| Resin ID (ISO 1043)    | • LCP                                    |                                        |                 |

### ASTM & ISO Properties <sup>1</sup>

| Physical                                           | Nominal Value        | Unit                  | Test Method    |
|----------------------------------------------------|----------------------|-----------------------|----------------|
| Density                                            | 1.77                 | g/cm <sup>3</sup>     | ISO 1183       |
| Molding Shrinkage                                  |                      |                       | ISO 294-4      |
| Across Flow                                        | 0.50                 | %                     |                |
| Flow                                               | 0.0                  | %                     |                |
| Mechanical                                         | Nominal Value        | Unit                  | Test Method    |
| Tensile Modulus                                    | 1.68E+6              | psi                   | ISO 527-2/1A   |
| Tensile Stress (Break)                             | 17100                | psi                   | ISO 527-2/1A/5 |
| Tensile Strain (Break)                             | 2.0                  | %                     | ISO 527-2/1A/5 |
| Flexural Modulus (73°F)                            | 1.74E+6              | psi                   | ISO 178        |
| Flexural Stress (73°F)                             | 23900                | psi                   | ISO 178        |
| Impact                                             | Nominal Value        | Unit                  | Test Method    |
| Charpy Notched Impact Strength (73°F)              | 2.9                  | ft-lb/in <sup>2</sup> | ISO 179/1eA    |
| Charpy Unnotched Impact Strength (73°F)            | 11                   | ft-lb/in <sup>2</sup> | ISO 179/1eU    |
| Notched Izod Impact Strength (73°F)                | 4.3                  | ft-lb/in <sup>2</sup> | ISO 180/1A     |
| Unnotched Izod Impact Strength (73°F)              | 12                   | ft-lb/in <sup>2</sup> | ISO 180/1U     |
| Thermal                                            | Nominal Value        | Unit                  | Test Method    |
| Heat Deflection Temperature (264 psi, Unannealed)  | 500                  | °F                    | ISO 75-2/A     |
| Heat Deflection Temperature (1160 psi, Unannealed) | 351                  | °F                    | ISO 75-2/C     |
| Melting Temperature <sup>2</sup>                   | 635                  | °F                    | ISO 11357-3    |
| CLTE - Flow                                        | 6.1E-6               | in/in/°F              | ISO 11359-2    |
| CLTE - Transverse                                  | 1.1E-5               | in/in/°F              | ISO 11359-2    |
| Electrical                                         | Nominal Value        | Unit                  | Test Method    |
| Surface Resistivity                                | > 1.0E+15            | ohms                  | IEC 60093      |
| Volume Resistivity                                 | 1.0E+16              | ohms·cm               | IEC 60093      |
| Comparative Tracking Index                         | • 175<br>• 175 (175) | V                     | IEC 60112      |

# Vectra® E440i

## Celanese Corporation - Liquid Crystal Polymer

| Flammability | Nominal Value | Unit | Test Method |
|--------------|---------------|------|-------------|
| Flame Rating | V-0           |      | UL 94       |

### Processing Information

| Injection              | Nominal Value | Unit |
|------------------------|---------------|------|
| Drying Temperature     | 302 to 338    | °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      | 626 to 644    | °F   |
| Nozzle Temperature     | 635 to 653    | °F   |
| Processing (Melt) Temp | 644 to 662    | °F   |
| Mold Temperature       | 176 to 248    | °F   |
| Injection Rate         | Fast          |      |
| Back Pressure          | < 435         | psi  |

### Injection Notes

Feeding zone temperature: 60 to 80°C  
 Zone4 temperature: 330 to 340°C  
 Hot runner temperature: 335 to 345°C

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 10°C/min