



## Fortron® 6165A4 FC

Celanese Corporation - Polyphenylene Sulfide

Tuesday, November 5, 2019

### General Information

#### Product Description

Fortron 6165A4FC offers a unique balance of properties based on a high mineral and glass reinforced composition for use in food contact applications. The heat resistance under load bearing conditions is excellent for this product. As with all Fortron grades this product is inherently flame-retardant.

#### 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                        | • Food Contact Acceptable   | • Good Heat Resistance |
| Uses                   | • Non-specific Food Applications         |                             |                        |
| RoHS Compliance        | • Contact Manufacturer                   |                             |                        |

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

| Physical                            | Nominal Value | Unit                  | Test Method    |
|-------------------------------------|---------------|-----------------------|----------------|
| Density                             | 1.95          | g/cm <sup>3</sup>     | ISO 1183       |
| Molding Shrinkage                   |               |                       | ISO 294-4      |
| Across Flow                         | 0.30 to 0.70  | %                     |                |
| Flow                                | 0.20 to 0.60  | %                     |                |
| Water Absorption (Saturation, 73°F) | 0.020         | %                     | ISO 62         |
| Mechanical                          | Nominal Value | Unit                  | Test Method    |
| Tensile Modulus                     | 2.76E+6       | psi                   | ISO 527-2/1A   |
| Tensile Stress (Break)              | 18900         | psi                   | ISO 527-2/1A/5 |
| Tensile Strain (Break)              | 1.2           | %                     | ISO 527-2/1A/5 |
| Flexural Modulus (73°F)             | 2.73E+6       | psi                   | ISO 178        |
| Flexural Stress                     | 30500         | psi                   | ISO 178        |
| Compressive Modulus                 | 2.68E+6       | psi                   | ISO 604        |
| Impact                              | Nominal Value | Unit                  | Test Method    |
| Charpy Notched Impact Strength      |               |                       | ISO 179/1eA    |
| -22°F                               | 3.3           | ft·lb/in <sup>2</sup> |                |
| 73°F                                | 3.3           | ft·lb/in <sup>2</sup> |                |
| Charpy Unnotched Impact Strength    |               |                       | ISO 179/1eU    |
| -22°F                               | 9.5           | ft·lb/in <sup>2</sup> |                |
| 73°F                                | 9.5           | ft·lb/in <sup>2</sup> |                |
| Notched Izod Impact Strength        |               |                       | ISO 180/1A     |
| -22°F                               | 2.9           | ft·lb/in <sup>2</sup> |                |
| 73°F                                | 2.9           | ft·lb/in <sup>2</sup> |                |
| Unnotched Izod Impact Strength      |               |                       | ISO 180/1U     |
| -22°F                               | 9.5           | ft·lb/in <sup>2</sup> |                |
| 73°F                                | 9.5           | ft·lb/in <sup>2</sup> |                |
| Hardness                            | Nominal Value | Unit                  | Test Method    |
| Rockwell Hardness (M-Scale)         | 100           |                       | ISO 2039-2     |

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| Thermal                                            | Nominal Value | Unit      | Test Method |
|----------------------------------------------------|---------------|-----------|-------------|
| Heat Deflection Temperature (264 psi, Unannealed)  | 518           | °F        | ISO 75-2/A  |
| Heat Deflection Temperature (1160 psi, Unannealed) | 419           | °F        | ISO 75-2/C  |
| Glass Transition Temperature <sup>2</sup>          | 194           | °F        | ISO 11357-2 |
| Melting Temperature <sup>2</sup>                   | 536           | °F        | ISO 11357-3 |
| CLTE - Flow                                        | 1.1E-5        | in/in/°F  | ISO 11359-2 |
| CLTE - Transverse                                  | 1.3E-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+17     | ohms·cm   | IEC 60093   |
| Electric Strength                                  | 640           | V/mil     | IEC 60243-1 |
| Relative Permittivity (1 MHz)                      | 5.60          |           | IEC 60250   |
| Dissipation Factor (1 MHz)                         | 2.0E-3        |           | IEC 60250   |
| Comparative Tracking Index                         | 175           | V         | IEC 60112   |
| Flammability                                       | Nominal Value | Unit      | Test Method |
| Flame Rating                                       |               |           | UL 94       |
| 0.030 in                                           | V-0           |           |             |
| 0.06 in                                            | V-0           |           |             |
| 0.12 in                                            | 5VA           |           |             |
| Oxygen Index                                       | 53            | %         | ISO 4589-2  |
| Fill Analysis                                      | Nominal Value | Unit      |             |
| Specific Heat Capacity of Melt                     | 0.382         | Btu/lb/°F |             |

### Processing Information

| Injection              | Nominal Value | Unit |
|------------------------|---------------|------|
| Drying Temperature     | 266 to 284    | °F   |
| Drying Time            | 3.0 to 4.0    | hr   |
| Suggested Max Moisture | 0.020         | %    |
| Hopper Temperature     | 68 to 86      | °F   |
| Rear Temperature       | 554 to 572    | °F   |
| Middle Temperature     | 590 to 608    | °F   |
| Front Temperature      | 626 to 644    | °F   |
| Nozzle Temperature     | 590 to 626    | °F   |
| Processing (Melt) Temp | 626 to 644    | °F   |
| Mold Temperature       | 284 to 320    | °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: 330 to 340°C

### Notes

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

<sup>2</sup> 10°C/min