



**Product Data Sheet &  
General Processing Conditions**

**RTP 681 HEC FR  
Acrylonitrile Butadiene Styrene  
(ABS)  
Nickel-Coated Carbon Fiber  
Electrically Conductive  
EMI/RFI Shielding  
Flame Retardant**

**PROPERTIES & AVERAGE VALUES OF INJECTION MOLDED SPECIMENS**

| <b>PERMANENCE</b>                            | <b>English</b>        | <b>SI Metric</b> | <b>ASTM TEST</b> |
|--|-----------------------|------------------|------------------|
| Primary Additive                             | 10 %                  | 10 %             |                  |
| Specific Gravity                             | 1.31                  | 1.31             | D 792            |
| Molding Shrinkage<br>1/8 in (3.2 mm) section | 0.0015 - 0.0025 in/in | 0.15 - 0.25 %    | D 955            |

**MECHANICAL**

|  |                            |          |        |
|--|----------------------------|----------|--------|
| Impact Strength, Izod<br>notched 1/8 in (3.2 mm) section | 0.7 ft-lbs/in              | 37 J/m   | D 256  |
| unnotched 1/8 in (3.2 mm) section                        | 4.0 ft-lbs/in              | 214 J/m  | D 4812 |
| Tensile Strength   | 9000 psi                   | 62 MPa   | D 638  |
| Tensile Elongation                                       | 1.6 %                      | 1.6 %    | D 638  |
| Tensile Modulus  | 0.90 x 10 <sup>6</sup> psi | 6206 MPa | D 638  |
| Flexural Strength  | 14000 psi                  | 97 MPa   | D 790  |
| Flexural Modulus   | 0.80 x 10 <sup>6</sup> psi | 5516 MPa | D 790  |

**ELECTRICAL**

|   |              |              |                    |
|---|--------------|--------------|--------------------|
| Volume Resistivity                                  | < 1E1 ohm.cm | < 1E1 ohm.cm | D 257              |
| Surface Resistance                                  | < 1E4 ohm    | < 1E4 ohm    | ESD STM11.11       |
| Static Decay<br>MIL-PRF-81705D, 5kV to 50 V, 12% RH | < 0.50 s     | < 0.50 s     | FTMS101C<br>4046.1 |

**THERMAL**

|  |               |              |        |
|--|---------------|--------------|--------|
| Ignition Resistance*<br>Flammability** | V-0 @ 1/16 in | V-0 @ 1.5 mm | D 3801 |
|--|---------------|--------------|--------|

**PROPERTY NOTES**

Data herein is typical and not to be construed as specifications.

Unless otherwise specified, all data listed is for natural or black colored materials. Pigments can affect properties.

\* This rating is not intended to reflect hazards of this or any other material under actual fire conditions.

\*\* Values per RTP Company testing.

**GENERAL PROCESSING FOR INJECTION MOLDING**

|                    | <b>English</b>    | <b>SI Metric</b> |
|--------------------|-------------------|------------------|
| Injection Pressure | 10000 - 15000 psi | 69 - 103 MPa     |
| Melt Temperature   | 400 - 460 °F      | 204 - 238 °C     |
| Mold Temperature   | 145 - 185 °F      | 63 - 85 °C       |
| Drying             | 2 hrs @ 180 °F    | 2 hrs @ 82 °C    |
| Moisture Content   | 0.10 %            | 0.10 %           |
| Dew Point          | 0 °F              | -18 °C           |

**PROCESSING NOTES**

Remove hopper magnets.

Desiccant Type Dryer Required.