



**Product Data Sheet &  
General Processing Conditions**

**RTP 205 FR  
Nylon 6/6 (PA)  
Glass Fiber  
Flame Retardant  
UL94 V-0**



The RTP series of flame retardant, glass fiber reinforced nylon materials are designed to provide the optimal balance of strength, electrical and ignition resistance properties while exhibiting excellent processing characteristics. RTP 205 FR possesses UL94 V-0 certification, as well as a complete range of UL94 electrical ratings and RTI assignment required for many EEE applications.

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

| PERMANENCE                      | English               | SI Metric     | ASTM TEST |
|---------------------------------|-----------------------|---------------|-----------|
| Primary Additive                | 30 %                  | 30 %          |           |
| Specific Gravity                | 1.65                  | 1.65          | D 792     |
| Molding Shrinkage               |                       |               |           |
| 1/8 in (3.2 mm) section         | 0.0015 - 0.0030 in/in | 0.15 - 0.30 % | D 955     |
| Water Absorption, 24 hrs @ 23°C | 0.600 %               | 0.600 %       | D 570     |

**MECHANICAL**

|                                   |                            |             |        |
|-----------------------------------|----------------------------|-------------|--------|
| Impact Strength, Izod             |                            |             |        |
| notched 1/8 in (3.2 mm) section   | 2.0 ft-lbs/in              | 107 J/m     | D 256  |
| unnotched 1/8 in (3.2 mm) section | 16.0 ft-lbs/in             | 854 J/m     | D 4812 |
| Tensile Strength                  | 24500 psi                  | 169 MPa     | D 638  |
| Tensile Elongation                | 2.0 - 3.0 %                | 2.0 - 3.0 % | D 638  |
| Tensile Modulus                   | 1.73 x 10 <sup>6</sup> psi | 11928 MPa   | D 638  |
| Flexural Strength                 | 36000 psi                  | 248 MPa     | D 790  |
| Flexural Modulus                  | 1.56 x 10 <sup>6</sup> psi | 10756 MPa   | D 790  |
| Hardness                          |                            |             |        |
| Rockwell, R                       | 118                        | 118         | D 785  |

**ELECTRICAL**

|                                  |               |               |       |
|----------------------------------|---------------|---------------|-------|
| Dielectric Strength, S/T, in oil | 475 VPM       | 18.7 kV/mm    | D 149 |
| Dielectric Constant, 1 MHz, Dry  | 3.8           | 3.8           | D 150 |
| Dissipation Factor, 1 MHz, Dry   | 0.0150        | 0.0150        | D 150 |
| Volume Resistivity               | > 1E14 ohm.cm | > 1E14 ohm.cm | D 257 |

**THERMAL**

|                                    |                  |                 |                |
|------------------------------------|------------------|-----------------|----------------|
| Deflection Temperature             |                  |                 |                |
| @ 264 psi (1820 kPa)               | 420 °F           | 216 °C          | D 648          |
| @ 66 psi (455 kPa)                 | 460 °F           | 238 °C          | D 648          |
| Ignition Resistance*               |                  |                 |                |
| Flammability                       | V-0 @ 0.020 in   | V-0 @ 0.5 mm    | UL94           |
| Flammability                       | V-0 @ 1/32 in    | V-0 @ 0.8 mm    | UL94           |
| Limiting Oxygen Index              | 34.0 %           | 34.00 %         | D 2863         |
| Glow Wire Ignitability Temperature | 775 °C @ 1/32 in | 775 °C @ 0.8 mm | IEC 60695-2-13 |
| Glow Wire Flammability Index       | 960 °C @ 1/32 in | 960 °C @ 0.8 mm | IEC 60695-2-12 |

**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.

**GENERAL PROCESSING FOR INJECTION MOLDING**

|                    |                   |               |
|--------------------|-------------------|---------------|
| Injection Pressure | 10000 - 18000 psi | 69 - 124 MPa  |
| Melt Temperature   | 530 - 570 °F      | 277 - 299 °C  |
| Mold Temperature   | 150 - 225 °F      | 66 - 107 °C   |
| Drying             | 4 hrs @ 175 °F    | 4 hrs @ 79 °C |
| Moisture Content   | 0.20 %            | 0.20 %        |
| Dew Point          | 0 °F              | -18 °C        |

#### PROCESSING NOTES

Desiccant Type Dryer Required.