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## Technical Fact Sheet

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# CTF 525 High Strength Technical Fiber

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### General Description

CTF 525 technical fiber is a high molecular weight polyacrylonitrile (PAN) homopolymer with superior mechanical properties and excellent thermal and environmental resistance compared to typical synthetic fibers. It has been found that CTF 525 technical fiber increases toughness in phenolic composites at low fiber concentrations. This can be used in NAO friction materials to reduce cracking, such as that found at rivet holes. CTF 525 fiber can be provided in a wide range of fiber lengths from 0.25 mm to greater than 15mm.

### Environmental Stability

CTF 525 fiber has excellent chemical and environmental resistance. It is not attacked by micro-organisms and has superior resistance to weathering and sunlight. CTF 525 fiber is insoluble in common organic solvents, and has excellent resistance to dilute alkalis and most acids. However, fiber degradation will occur under hot, concentrated alkaline conditions.

### Typical Physical Properties

|                     |                              |
|---------------------|------------------------------|
| Color               | cream                        |
| Cross section       | round                        |
| Density             | 1.18 g/cm <sup>3</sup>       |
| Length              | 0.5 - 10 mm                  |
| Diameter            | 12 μm (0.0005 in)            |
| Denier              | 1.2 dtex (1.1 denier)        |
| Tensile strength    | 1100 MPa (160 ksi)           |
| Modulus             | 13.8 GPa (2 Msi)             |
| Elongation          | 12%                          |
| Shrinkage at 180°C  | 5%                           |
| Moisture content    | < 4%                         |
| Dielectric Constant | 2.8 @ 1MHz                   |
| Dissipation Factor  | 8.7 x 10 <sup>-4</sup> @1MHz |
| Thermal Expansion   | 2x10 <sup>-4</sup> / °C      |
| Surface charge      | anionic                      |

### IMPORTANT NOTICE

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