

# MINIFIBERS, INC.

## Technical Data Sheet

### POLYPROPYLENE FIBERS

#### 18 $\mu$ m Monofilament

Product Code Prefix: PPSTM-018NRR

**General Description:** Polypropylene is a manufactured fiber in which the fiber-forming substance is a long-chain synthetic polymer composed of at least 85% by weight of propylene units. This 18 $\mu$ m monofilament is a very fine fiber that is specially suited to reduce shrinkage and prevent crack formation in cementitious materials, as well as reducing the potential for explosive fragmentation of concrete when exposed to fire or intense heat.

**Standard Filament Size:** 18 $\mu$ m

**Standard Cut Lengths:** 3mm, 6mm, 12mm, 18mm

**Tensile Strength:**  $\geq 557$  MPa

**Elastic Modulus:**  $\geq 4.1$  GPa

**Specific Gravity:** 0.91 g/cm<sup>3</sup>

**Average Moisture Absorption:** <0.1%

**Effects of Heat:** Softens at  $\sim 160^{\circ}\text{C}$  / $\sim 320^{\circ}\text{F}$ . Melts at  $\sim 168^{\circ}\text{C}$  / $\sim 335^{\circ}\text{F}$ .  
Decomposes at  $\sim 288^{\circ}\text{C}$  / $\sim 550^{\circ}\text{F}$ .

In concrete, with the development of intense heat, the fibers will melt and create small capillary cavities, which can delay explosive fragmentation.

**Chemical Resistance:** Good resistance to acids and alkalis. Physically resistant to chemicals in concrete.

**Performance Characteristics:** This fiber is specially treated to reduce air intake in cementitious products, which decreases porosity and improves strength. It has high dispersibility in the matrix, and the fineness of the fibers results in a high fiber frequency and increased surface area. This provides increased tensile strength and helps to evenly distribute early shrinkage tension, thus reducing the formation of cracks and long-term weaknesses in the material. The 18 $\mu$ m product is preferred for use in wet mixes.

**Other Characteristics:** One of the lightest of all fibers. Not attacked by microorganisms, mold or mildew. Low thermal conductivity. Very little tendency to acquire static charge.

**Packaging:** Standard packaging is corrugated boxes with polyethylene liners. Other packaging available upon request.

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