



NEXTEL® 312

Properties:

Nextel 312 are continuous polycrystalline metal oxide fibers suitable for producing textiles without the aid of other fiber or metal inserts. The basic composition by weight is 62% aluminum oxide (Al₂O₃), 14% boron oxide (B₂O₃) and 24% silicon dioxide.

Physical Properties:

Color: White
Length: Continuous
Fiber Density: 2.7 gm/cc:

Thermal Properties

Continuous Use Temperature 1204°C -2200°F
Short Use Temperature 1371°C-2500°F
Lineal Shrinkage (2000°F-1093°C) 1.25%
Melting Point 1800°C-3272°F
Thermal Expansion Coefficient 25-500°C $3.0 \times 10^{-6} \Delta t/L/^\circ C$

Mechanical Properties:

Tensile Strength 1725 MPa (250,000 psi)
Tensile Modulus 138 GPa (20×10^6 psi)

Electrical Properties:

Dielectric Constant $5.2 @ 9.375 \times 10^9$ hertz

The above data is based on averages

Note: Nextel ceramic yarn is coated with organic polymer sizing that may be heat cleaned

Effect of heat:

Mechanical performance maintains up to 2200°F. High resistance thermal shock.

Effect of Acids and Alkalis:

Resistant to virtually all fluids.

Dyes Used:

non-Dyeable.

Resistance to Mildew, aging, Sunlight and Abrasion:

Resistance to Mildew and sunlight. Abrasion resistance is poor.

Suggested Uses:

Braided sleeves, tapes, cordages and specialty gaskets for higher temperature applications specifications.

Specifications:

N/A - In use in the U.S. Military and Aero and Space industry

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