



# 200C-ULF Powder (K20 Ultra-Low-Fire COG Dielectric)

## Features:

1. MgTiO<sub>3</sub> based ultra-low-fire COG dielectric
2. Dielectric Constant of 20-23
3. Excellent insulation resistance
4. High Q at high frequency
5. No Cd, Pb, Bi containing compounds

## Typical Physical Properties:

1. Particle Size (D50) 0.8-1.2um
2. Surface Area 2.0-4.0 m<sup>2</sup>/g
3. Specific Gravity 3.3-3.8g/cc
4. +325 mesh <0.5%

## Typical Fired Electrical Properties:

1. Dielectric Constant 20-23
2. Dissipation Factor(1MHz,1.0Vrms) 0.020%  
Q(0402 14pf) @(1 GHz) 137  
ESR 096 Ohm
3. TCC 0± 30ppm/°C from -55-125°C
4. IR at 25°C >5,000 Ohm-F  
125°C >1,000 Ohm-F
5. Dielectric Withstanding Voltage >1000V/mil

Sample size available

## Processing Guidelines:

(Detailed instructions available)

1. 200C-ULF is a fine particle size, deagglomerated powder. No further particle size reduction is required.
2. ZrO<sub>2</sub> media is recommended for mixing/milling operations. Contaminants such as aluminum oxides will result in degradation of electrical properties.
3. 50wt% ceramic /50% binder ratio is recommended as a starting point for casting using PVB or B7 acrylic binder systems.
4. Firing on ZrO<sub>2</sub> setters is recommended.
5. Firing temperature is in the 880-920°C range with a 2 hours soaking at peak temperature.

## Compatible Materials systems

1. 200C-ULF is compatible with solvent base binder system.
2. 200C-ULF is compatible with commercially available 95%Ag/5%Pd or 100%Ag electrode system.