

Product Samples

ATP1020: Plated Cu Samples

Applied Thin-Film Products (ATP) is pleased to provide ceramic thin-film samples for your evaluation.

TiW/Au/Cu/Ni/Au metalization on Aluminum Oxide (Al₂O₃) that is used as a high conductivity film that may require Pb/Sn soldering. Combined copper and nickel can be plated as thick as 0.001" or 25.4µm.

ATP1020: Material is 15 mil As-Fired Al₂O₃
 TiW = 600–800 Ångströms
 Au = 120µ" minimum
 Cu = 400µ" minimum
 Ni = 20µ" minimum
 Au = 40µ" maximum

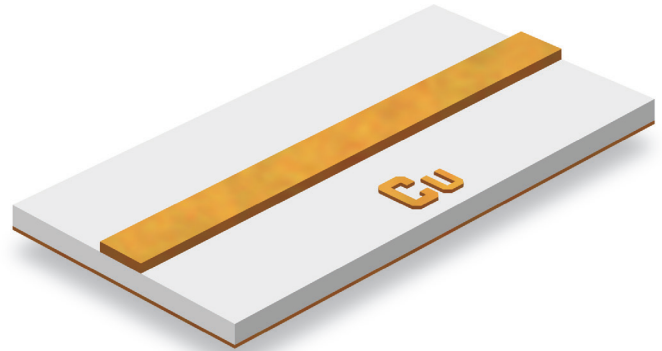
Material Specifications

Asfired High Density 996 Aluminum Oxide Superstrate 996

Properties	Values
Chemical Composition	Al ₂ O ₃
Purity	99.6%
Color	White
Nominal Density	3.88g/cm ³
Surface Finish (Asfired)	3µ" (76.2nm)
Camber	0.002" (0.0508mm)
Thickness	0.015" (0.381mm)
Thickness Tolerance (±)	0.001" (0.0254mm)
Coefficient of Thermal Expansion (CTE)	7.0–8.3 x 10 ⁻⁶ (25–1000°C)
Thermal Conductivity 100°C	26.9 Watts/m ² K
Dielectric Constant 1 MHz	9.9 @ 1 MHz ±0.1
Dielectric Constant 10 GHz	9.7 @ 10 GHz ±0.1
Dissipation Factor (Loss Tangent)	0.0001 @ 1 MHz
Hardness (Rockwell)	87
Flexural Strength	90K (10 ⁻³) lbs/in ² (620Mpa)
Compressive Strength	54 x 10 ⁻³ M lbs/in ²
Grain Size	< 1.0µm

Material specifications provided by Coors Ceramic Company

Sample Provided



ATP offers build-to-print service for a wide range of materials and metalization schemes. ATP fabricates circuits on substrates from As-Fired Alumina to Beryllium Oxide to Fused Silica, even Silicon. Metalizations range from the standard Tan/TiW/Au to films including Nickel, Palladium, or Titanium.

At ATP, we constantly evolve our processing and material capabilities to reflect our customer's changing needs. If you have a circuit requirement that is out of the "normal" thin-film type, please contact ATP at 1.510.661.4287 or visit our website at www.thinfilm.com. ATP would enjoy discussing your application with you and working to develop a solution.