

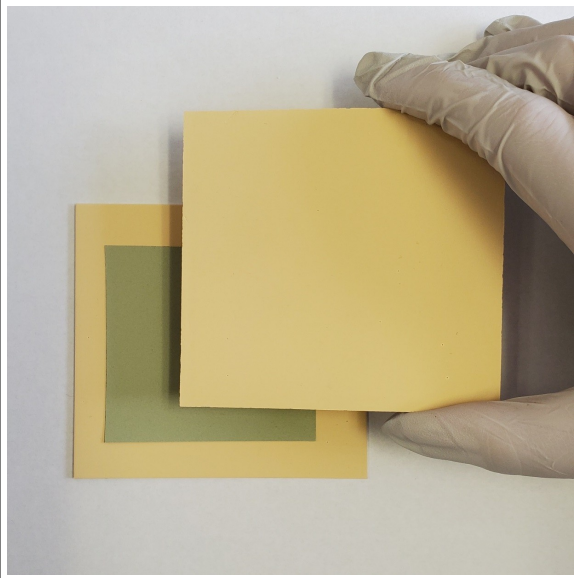


# C12 Advanced Technologies

## C12 POROUS ZrO<sub>2</sub>-COATED MAGNESIA PLATE Product PLT-ZMG994-POR1



C12 Porous ZrO<sub>2</sub>-Coated Magnesia Plates are available in a range of standard sizes and thickness, and custom sizes are also available.



C12 Porous ZrO<sub>2</sub>-Coated Magnesia Plates are ideal for preventing sticking, cracking and "setter drag" problems during sintering.

**C12 Porous ZrO<sub>2</sub>-Coated Magnesia Plates** are ideal for heat treating and sintering solid oxide fuel cell (SOFC) components, Li-ion battery components, hard and soft ferrites, piezoelectric ceramics, zinc oxide and titanate-based capacitors, metal injection molded (MIM) components, and other components that are chemically incompatible with conventional setters.

Setters containing alumina or silica (SiO<sub>2</sub>) have adverse chemical reactions with many important technical materials including lithium-based solid electrolytes used in batteries, solid oxide fuel cell (SOFC) components that contain lanthanides and transition metals, nickel manganese compositions used in ferrites, piezoelectric ceramics and capacitors, dental zirconia, metal injection molded (MIM) compositions, and alloys that contain titanium or tungsten. Alumina-based setters also have poor thermal shock resistance and a tendency to exhibit excessive thermal creep or "slumping" at temperatures higher than about 1500°C, particularly in the porous form.

In addition to keeping parts flat and distortion-free, C12 ZrO<sub>2</sub>-Coated MgO Plates provide a smooth, non-reactive porous surface that prevents sticking and cracking. C12 ZrO<sub>2</sub>-Coated MgO Plates are highly planar, and have a porosity of about 38% which permits gasses that evolve during sintering to pass easily through the plate. C12 ZrO<sub>2</sub>-Coated MgO Plates are composed of a high purity MgO core with a patented ZrO<sub>2</sub> coating on each face that will not delaminate or spall, even after repeated use.



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Due to the fact that MgO has a melting temperature which is significantly higher than any other common oxide ceramic (>3100 K), C12 ZrO<sub>2</sub>-Coated MgO Plates resist warping better than standard alumina or other stabilized zirconia plates, and typically have a longer service life.

## Advantages and Applications

- Prevents sticking, cracking and “setter drag” problems.
- Resists warping, better mechanical strength than standard porous alumina plates.
- Higher service temperatures (over 1600°C), and longer service life.
- ZrO<sub>2</sub> coating will not delaminate or crack.
- Provides non-reactive, high temperature support where other materials fail.
- Highly planar, dust-free, particle-free surface.
- Remains electrically insulating at high temperatures.
- Plates can be easily cut to size.
- Better thermal shock resistance than alumina.
- Patented coating technology