

EROSION RESISTANT PROCESS CHAMBER COMPONENTS

ABSTRACT

A substrate processing chamber component demonstrates reduced erosion in an energized gas. The component has a ceramic structure composed of aluminum oxide with a surface exposed to the energized gas in the chamber. The erosion of the surface by the energized gas is substantially reduced by erosion resistant properties of the ceramic structure, which arise from a ratio of the total area of the grains G_{SA} to the total area of the grain boundary regions GB_{SA} in the ceramic structure of from about 0.25 to about 2.5. Also, at least about 80% of the grains in the ceramic structure have a grain size in the range of from about 1 micron to about 20 microns. The ceramic structure also has a purity of at least about 99.8% by weight to further reduce erosion of the surface.

Figure 4