

CERIA COMPOSITE PARTICLE DISPERSION, METHOD FOR PRODUCING SAME,
AND POLISHING ABRASIVE GRAIN DISPERSION COMPRISING CERIA
COMPOSITE PARTICLE DISPERSION

ABSTRACT

The present invention addresses the problem of providing a silica composite particle dispersion capable of polishing silica films, Si wafers, or difficult-to-machine materials at high speed and of achieving high surface precision at the same time. This problem is solved by a ceria composite particle dispersion comprising ceria composite particles having an average particle size of 50 to 350 nm and having the features described below. Each ceria composite particle comprises a mother particle, a cerium-containing silica layer on the surface thereof, and child particles dispersed inside the cerium-containing silica layer, the mother particles being amorphous silica-based and the child particles being crystalline ceria-based. The child particles have a coefficient of variation (CV value) in a particle size distribution of 14 to 40%. The ceria composite particles have a mass ratio of silica to ceria of 100:11-316. Only the crystal phase of ceria is detected when the ceria composite particles are subjected to X-ray diffraction. The average crystallite size of the crystalline ceria measured by subjecting the ceria composite particles to X-ray diffraction is 10 to 25 nm.

[Figure 1]