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Abstract

An abrasive composition for polishing a semiconductor device includes water, microparticles of an abrasive and a chelating agent. The abrasive microparticles are cerium oxide microparticles having an average particle size of 0.01-1.0 μm. A selectivity ratio of the rate of polishing a silicon nitride film to the rate of polishing a silicon oxide film is 10 or more. For these reasons, the planarization-polishing step can be performed with high controllability. In addition, scratches being formed on the polished surface can be reduced to a great extent, and the still remaining abrasive particles can readily be removed from the polished wafer through washing. Therefore, the abrasive composition is advantageously used as that for polishing the oxide film to form a semiconductor device having a shallow trench isolation structure in a well-controlled manner.