

Abstract

The invention provides an etchant composition employed for selectively etching a metallic material in production of a semiconductor device from an insulating material having high dielectric constant, an insulating material of silicon oxide film or silicon nitride film, and a metallic material, characterized in that the etchant composition is an aqueous solution containing a fluorine compound, and a chelating agent having, in the molecular structure thereof, a phosphorus oxo-acid as a functional group; or is an aqueous solution containing a fluorine compound, a chelating agent having, in the molecular structure thereof, a phosphorus oxo-acid as a functional group, and an inorganic acid and/or an organic acid. The invention also provides a method for producing a semiconductor device employing the etchant composition. According to the invention, a metallic material can be etched selectively and efficiently.