Abstract

In order to selectively further etch silicon nitride by a cleaning liquid in cleaning of a substrate having silicon nitride and silicon oxide on the substrate, a cleaning liquid for use in cleaning of a substrate having silicon nitride and silicon oxide on the same substrate, at least a portion of one or both of the silicon nitride and the silicon oxide being exposed on the substrate, including phosphoric acid, electrolytic sulfuric acid produced by electrolysis and including persulfuric acid suitably having a concentration of 1.0 g/L to 8.0 g/L, and water is suitably brought into contact with the substrate at 165°C or higher and lower than a boiling point to selectively etch the silicon nitride on the substrate, thereby effectively etching the silicon nitride while etching of silicon oxide is suppressed to favorably clean a semiconductor substrate high in degree of integration having a pattern line width of 37 nm or less.