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(54) Title: PROCESS AND APPARATUS FOR TREATING A WORKPIECE SUCH AS A SEMICONDUCTOR WAFER

(57) Abstract

A novel chemistry and application technique used in a chemical process sequence to address the contamination concerns of the microelectronic fabrication industry is set forth. These concerns are namely: minimizing contamination for organics, particles, metal/ions, and silicon dioxide. Generally stated, cleaning of workpieces (20), such as semiconductor wafers, is accomplished by delivery of a chemical stream to the workpiece surface (20). Ozone is delivered either into the liquid process stream (70) or into the process environment (15). The chemical stream, which may be in the form of a liquid or vapor, is applied to the wafer in a system which enables control of the boundary layer which forms on the workpiece surface (20). The chemical stream may include components such as ammonium hydroxide for simultaneous particle and organic removal, another chemical to raise the pH of the solution, or other chemical additives designed to accomplish one or more specific cleaning tasks.

