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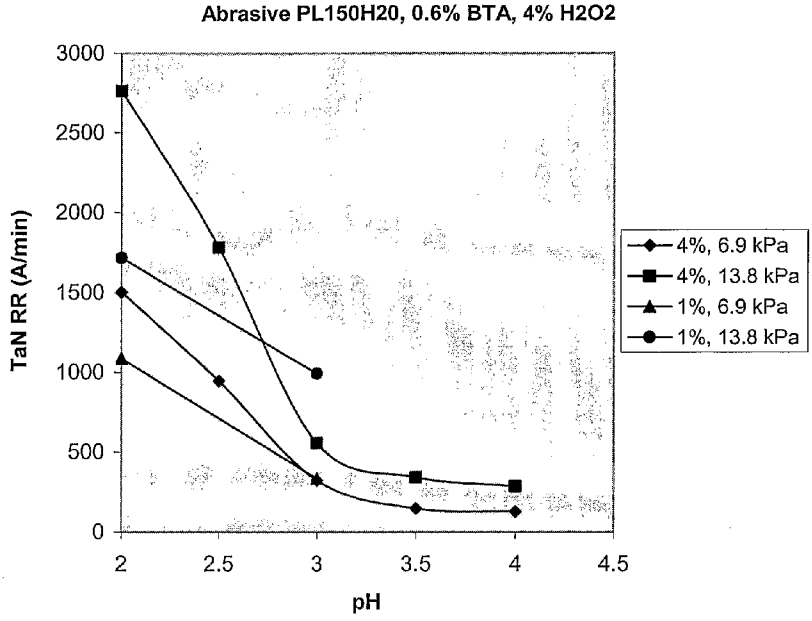
(54) Title: SELECTIVE BARRIER METAL POLISHING SOLUTION



(57) Abstract: The polishing solution is useful for removing barrier materials in the presence of interconnect metals and dielectrics. The polishing solution comprises, by weight percent, 0.1 to 10 hydrogen peroxide, at least one pH adjusting agent selected from the group consisting of nitric acid, sulfuric acid, hydrochloric acid and phosphoric acid for adjusting a pH level of the polishing solution to less than 3, at least 0.0025 benzotriazole inhibitor for reducing removal rate of the interconnect metals, 0 to 10 surfactant, 0.01 to 10 colloidal silica having an average particle size of less than 50 nm and balance water and incidental impurities. The polishing solution has a tantalum nitride material to copper selectivity of at least 3 to 1 and a tantalum nitride to TEOS selectivity of at least 3 to 1.

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