FLUORIDE-FREE PHOTORESIST STRIPPER OR RESIDUE REMOVING CLEANING COMPOSITIONS CONTAINING CONJUGATE OLIGOMERIC OR POLYMERIC MATERIAL OF ALPHA-HYDROXYCARBONYL COMPOUND/AMINE OR AMMONIA REACTION

Abstract

Fluorine-free, organic solvent-based microelectronics cleaning formulations containing: (a) at least one "yellowed" or "browned" alpha-hydroxycarbonyl compound that is a oligomeric or polymeric conjugate of a alpha-hydroxycarbonyl compound with an amine or an ammonium compound, (b) at least one free amine and (c) at least one organic solvent or at least one organic solvent and water. Such formulations may also comprise other optional components, including (d) at least one metal ion-free base at sufficient amounts to produce a final composition of pH, 7 or above, preferably a pH of about 9.5 to about 10.8, and one or more of (e) a polyhydric alcohol, (f) a metal chelating agent, and (g) a surfactant. Such compositions are useful to clean microelectronic devices without any significant corrosion of the metal and is compatible with ILDs.