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

Abstract

Semi-aqueous microelectronics cleaning formulations containing: (a) at least one fluoride compound providing fluoride ions, (b) at least one "browned" alpha-hydroxycarbonyl compound that is a oligomeric or polymeric conjugate of a alpha-hydroxycarbonyl compound with an amine or an ammonium compound, and (c) water. Such formulations may also comprise other optional components, including (d) at least one polar, water miscible organic solvent, (e) 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 (f) a polyhydric alcohol and (g) a surfactant. Such compositions are useful to clean microelectronic devices without any significant corrosion of the metal and is compatible with ILDs.