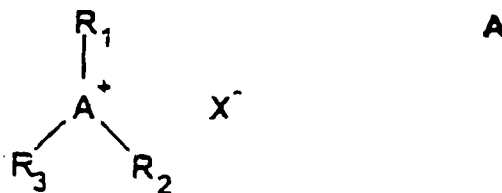


SOLUTION AND PROCESS TO PRETREAT COPPER SURFACES

ABSTRACT

The invention concerns solutions and procedures to pretreat copper surfaces so that a tight bond can be subsequently formed with organic substrates. The solution is especially used to tightly laminate multilayer printed circuit boards and tightly adhere resists to the copper surfaces of printed circuit boards. The solution contains:

- a. Hydrogen peroxide,
- b. At least one acid, and
- c. At least one nitrogen-containing, five-member heterocyclic compound that does not contain sulfur, selenium or tellurium atoms in the heterocycle, and
- d. At least one adhesion-promoting compound from the group consisting of sulfinic acids, selenic acids, telluric acids, heterocyclic compounds that contain at least one sulfur, selenium and/or tellurium atom in the heterocycle, as well as sulfonium, selenonium and telluronium salts of general formula A:



where A = S, Se or Te,

R_1 , R_2 and R_3 = alkyl, substituted alkyl, alkenyl, phenyl, substituted phenyl, benzyl, cycloalkyl, substituted cycloalkyl, where R_1 , R_2 and R_3 can be the same or different, and

X^- = anion of an inorganic or organic acid or hydroxide.

With the proviso that the acid used for component b is not identical to the sulfinic, selenic or telluric acids used for component d.

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