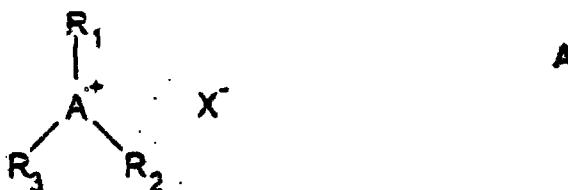


PROCESS TO PRETREAT COPPER SURFACES

ABSTRACT

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

The copper surfaces are first contacted with a first solution that contains hydrogen peroxide, at least one acid, and at least one nitrogen-containing, five-member heterocyclic compound which does not contain sulfur, selenium or tellurium atoms in the heterocycle. Then The copper surfaces are brought into contact with a second solution containing at least one adhesion-promoting compound from the group, consisting of sulfinic acid, selenic acid, telluric acid, heterocyclic compounds that contain at least one sulfur, selenium and/or tellurium atom in the heterocycle and 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 are the same or different, and

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

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