

dipped into a solution of 12%  $H_3PO_4$  in 4 N HCl and washed with water until the pH was 4 and again dried at room temperature.

The behaviour of Ag(I), Cu(II) and Au(III) was found to be as follows: Au(III) as  $AuCl_4^-$  is not retained on a column of ZP, contrary to what happens on an organic exchanger such as Dowex-50<sup>3</sup>. From a solution of Au(III) and Cu(II) (as  $CuCl_2$ ) only Cu(II) is retained.

Ag(I) and Cu(II) as sulphates are retained on a column and can be readily separated by eluting first with 0.1 N HCl (2 ml suffice) to remove the Cu(II) and then with  $NH_3-NH_4Cl$  (4 N) which removes the silver.

Au(III) has the same  $R_F$  value on ZP-impregnated paper as on ordinary Whatman No. 1 paper ( $R_F = 0.65 - 0.70$ ) when developed with 0.01 N HCl or water.

When a mixture of Ag(I) and Cu(II) sulphates are developed with 0.1 N HCl, Ag(I) stays on the point of application and Cu(II) has an  $R_F$  of 0.7 - 0.8. Thus the behaviour is analogous to that on ZP columns.

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## A rapid method for the preparation of packing material for gas chromatographic columns

The generally accepted practice in preparing the stationary phase for gas-liquid chromatography is to dissolve the liquid substrate in a suitable volatile solvent, add this to the support material and then remove the solvent by careful heating. This is often a tedious procedure and is subject to frequent "bumping" of the mixture.

A more satisfactory way of removing the solvent is to carry out the evaporation in a rotating-type vacuum evaporator. This operation takes only a matter of minutes and on completion the packing generally requires very little further conditioning.

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