

To impart flame-retardancy, cotton cellulose was phosphorylated with diammonium hydrogen orthophosphate (DAP). Urea was also used as a nitrogenous synergist in conjunction with DAP at a molar ratio of 3. Fabrics padded with aq. soln of DAP/urea were dried, cured and finally afterwashed with dist. water.

Phosphorylated fabrics were, then, ion-exchanged in several metal salt solutions.

In this study, effects of urea and its functions were investigated and factors influencing ion-exchange selectivity and chelate stabilities of cation-exchanged samples were discussed in view of wash-durability of flame-retardancy.

In the presence of urea, loosely bound, temporary adduct with DAP seems to be formed and because of this adduct phosphorus content fixed (that is, the degree of phosphorylation) was considerably increased. Phosphorylated cell. rendered ion-exchange properties, so formed chelate with divalent cations.