

KITTIPORN SAEJUENG : SYNTHESIS AND PROPERTY STUDIES OF CERTAIN
INORGANIC TIN COMPOUNDS FOR USING AS FLAME RETARDANTS ON COTTON :
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Inorganic tin (IV) compounds, metal hydroxy stannate, $M\text{Sn}(\text{OH})_6$ where $M = \text{Na}, \text{Mg}, \text{Ca}, \text{Ba}, \text{Co}, \text{Ni}, \text{Cu}, \text{Zn}, \text{Sn}$ and ZrO have been synthesized by double decomposition reaction in aqueous solution. The structures of the inorganic tin compounds have been characterized by XRD, IRS, AAS, ICP-AES and CHN elemental analysis.

These tin compounds as deposited on cotton have shown a flame retardant property. The deposition can be either one or two bath system. The actual tin level for adequate flame retardant is between 4-13% of the cotton weight. The flammability test has been measured by LOI method and vertical flame test. The structure in the fiber of cotton has also been examined by SEM.

Thermal analysis and mass conversion have been studied to clarify the mode of action of the tin compounds, and this appears to involve the condensed phase.