

CHADAPORN THAVORNPANICHKIJ : SYNTHESIS OF ORGANOTINBORATE
DERIVATIVES. THESIS ADVISOR : ASST. PROF. AMORN PETCHSOM
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Organotinborate compounds, tris-(trialkyltin) borate, bis-(trialkyltin) borate and trialkyltin borate were synthesized by the esterification of organotin compounds such as triphenyltin hydroxide (Ph_3SnOH) and/or bis-(tributyltin) oxide (TBTO) with boric acid B(OH)_3 in various molar ratio. Tris-(dialkyltin) diborate, dialkyltin diborate and dialkyltin borate were synthesized by the esterification of organotin compound such as dialkyltin oxide (R_2SnO) where R = butyl- and/or octyl-group with boric acid in various molar ratio. Bis-(alkatetrabutyliditin) diborate and alkatetrabutyliditin diborate were synthesized by the esterification of organoditin compounds such as 1,6-hexylene-bis-(dibutyltin) oxide and/or 1,4-butylene-bis-(dibutyltin) oxide with boric acid in various molar ratio, in refluxing toluene. The structure of organotinborate compounds were characterized by IR, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, $^{119}\text{Sn-NMR}$ and $^{11}\text{B-NMR}$ spectroscopic technics and elemental analysis. The products will depend on molar ratio of organotin compounds, alkyl group nature and amount of alkyl groups. Besides these, the appropriate molar ratio gave maximum yield of products.