

# Chemistry of Polyhalogenated Nitrobutadienes, Part 11: *ipso*-Formylation of 2-Chlorothiophenes under Vilsmeier-Haack Conditions

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The regioselective *ipso*-formylation of electron-rich, 3,4-push-pull-substituted 2-chlorothiophenes under Vilsmeier-Haack conditions was performed in good yields. The synthetic scope of this new reaction was explored using various halothiophenes, chloroanilines, and 1-methyl-3-chloroindole. In comparison with their structural C-H analogs the chlorinated thiophenes, anilines, and the indole proved to be less reactive toward electrophilic attack by chloromethyleniminium salts.

*Key words:* Vilsmeier-Haack Formylation, Thiophene, Push-Pull Substitution, *ipso*-Substitution,  
Enamine