

Electrophilic bromination of deactivated aromatic compounds with N- bromosuccinimide and boron trifluoride monohydrate

Haloarenes are compounds of practical utility which are used for flame control and as biocides in agriculture. As such, there are many known ways to prepare them mainly from electron-rich aromatic rings. Bromination of deactivated aromatic rings normally requires severe experimental conditions. This paper describes a mild, efficient and convenient method for the synthesis of bromo-arenes using N-bromosuccinimide and boron trifluoride monohydrate ($\text{BF}_3 \cdot \text{H}_2\text{O}$) from substrates that are moderately deactivated. Boron trifluoride monohydrate serves as the solvent and is inexpensive. Depending on the degree of deactivation of the ring the reaction took fifteen minutes to a day for completion.

Fluorobenzene, trifluorotoluene, 2,4-difluoronitrobenzene and 1,2-diiodobenzene gave excellent yields of the mono bromo- products while the other haloarenes gave very good yields but also produced two isomers. Nitrobenzene was converted in about sixty percent.

The halogenation of more highly deactivated aromatics and substances insoluble in the medium were low.