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A Study on Electrophilic Aromatic Substitution of Acetanilide

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Abstract: *Acetanilide was the first aniline derivative serendipitously found to possess analgesic as well as antipyretic property. The literature review shows the study and preparation of acetanilide. The present work was planned to prepare acetanilide from different aldehydes. Acetanilide was prepared by reacting aniline, acetic anhydride and glacial acetic acid. The produced acetanilide is the substituted with different aromatic aldehydes.[1]*

Electrophilic Aromatic Substitution (EAS) of acetanilide involves the substitution of a hydrogen atom on the aromatic ring of acetanilide by an electrophile. In this process, the nucleophilic aromatic ring reacts with the electrophile, and one of its hydrogens is replaced by the incoming substituent. Acetanilide, with the formula C8H9NO, consists of a benzene ring attached to an amide group (-NHCOCH3).

The preparation of acetanilide from aniline via electrophilic aromatic substitution is a well-established method in organic chemistry. The process involves the activation of the aniline ring by the amino group, which makes it highly reactive toward electrophilic acetylation. Acetic anhydride is commonly used as the acetylating agent due to its higher reactivity compared to glacial acetic acid. Acetanilide remains a key intermediate in the chemical and pharmaceutical industries, underscoring the importance of this reaction in organic synthesis.[1].

Keywords: Acetanilide, Aldehyde Derivatives, Benzene, Amide group, Aniline

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