Electrophilic Aromatic Substitution

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Intro

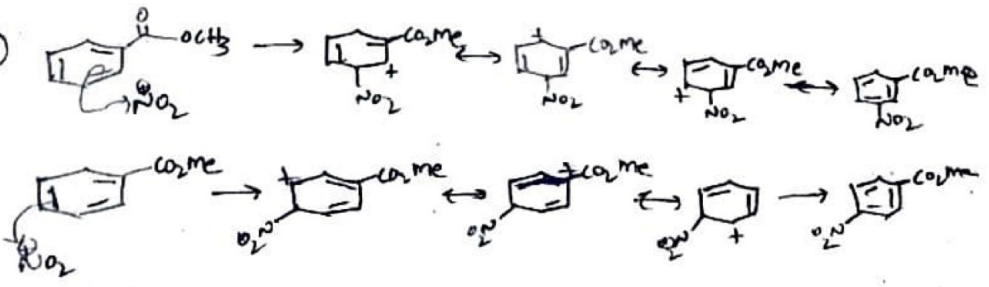
In electrophilic aromatic substitution reactions, which are organic processes, an atom attached to an aromatic ring is substituted by an electrophile. Generally, an electrophile replaces a hydrogen atom from a benzene ring in these processes. These procedures provide significant intermediates that can be used as precursors in the production of pharmaceutical, agrochemical, and industrial goods.

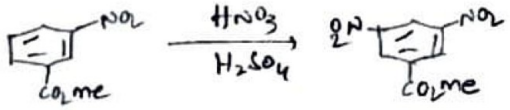
Method

In this experiment, an aromatic molecule was given a nitro group addition; nitronium ions are produced when nitric acid is dehydrated. The very electrophilic nitro group will react with the aromatic rings' electrons. We employed the precipitation method to precipitate the product by crystallization following the reaction between the nitronium and the aromatic rings. Also, we combined sulfuric acid with methyl benzoate before combining sulfuric acid with nitric acid to produce nitration. Finally, we utilized ice to produce condensation so we could collect the precipitate.

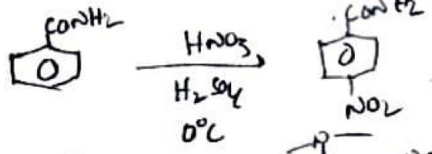
Question 1: mass and volume of 12 mol of methyl benzoate is 1.633 mol

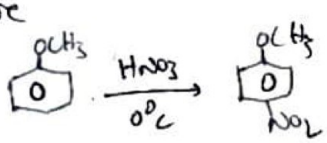
Question 4: Methyl benzoate undergoes aromatic electrophilic reaction while methyl benzoate does not sulphonate with sulphuric acid because the sulfuric acid protonate the methyl benzoate and does not produce electrophilic and instead forming HSO4.

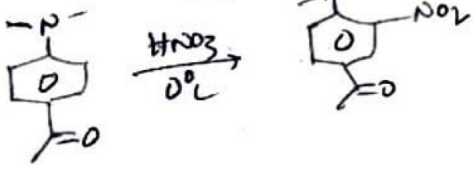
1) 

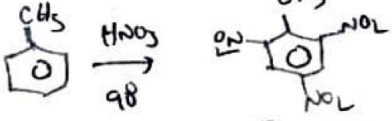
2) 

3) Very trace of P/O nitro methyl benzoate

4) (a) 

(b) 

(c) 

(d) 

(TNT)

Trinitrotoluene