

Chem 345 – Organic Reactions

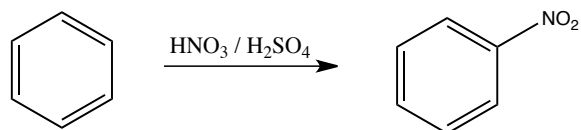
Chapter 16

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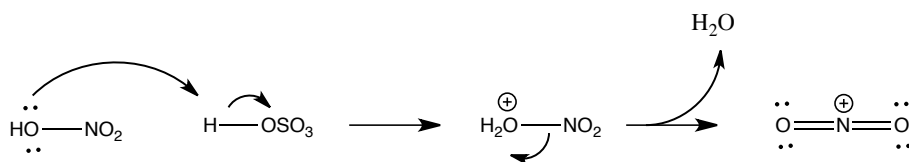
<http://www.chem.wisc.edu/areas/clc> (Resource page)

Electrophilic Aromatic Substitution #1: Nitration

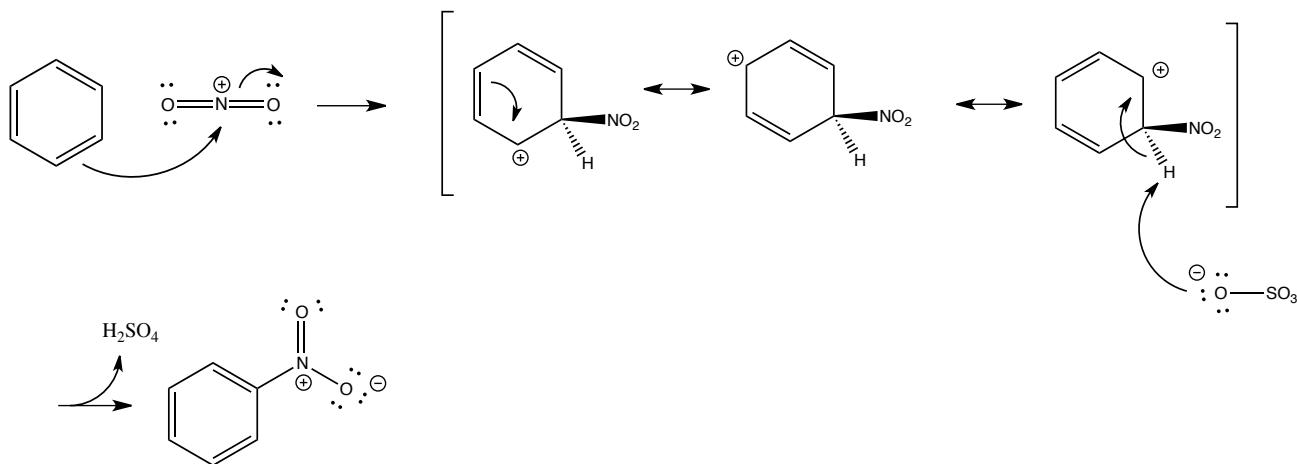
Reaction



Electrophile



Mechanism



The nitration reaction is the most studied of the EAS reactions. The nitronium ion (NO₂⁺) is isoelectronic with CO₂. It is a reactive electrophile. Reactive electrophiles tend to be less selective than weaker or more stable electrophiles.

Activated aromatic compounds can be nitrated multiple times. Phenols can be nitrated under mild conditions, that is, just HNO₃.

Nitro groups are classified among the most electron-withdrawing substituents. They deactivate an arene compound from further EAS reactions.