

Expt 10: The Grignard Reaction: Synth of Benzoic Acid

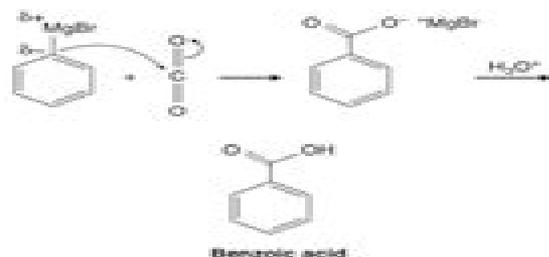
Objective: To prepare phenyl-magnesium bromide from magnesium and bromobenzene to create a Grignard reagent. After adding this reagent to carbon dioxide, we obtain benzoic acid after hydrolysis.

Introduction: Grignard reagents belong to organometallic compounds. This is a class of organic compounds that contains a carbon bonded to a metal. The Grignard reagent is formed by the reaction of an alkyl halide with magnesium metal in anhydrous ether. The reaction is shown below:

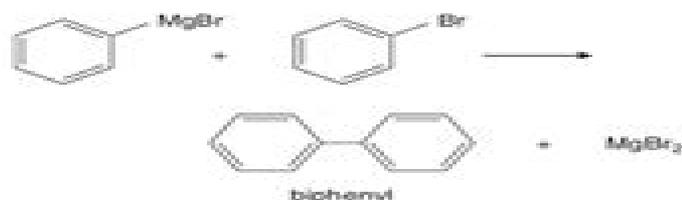


The carbon atom of a Grignard reagent is a powerful nucleophile and a strong Lewis base. The starting materials for preparing Grignard reagents have no acidic protons, and all reactants, solvents, and glassware must be dry for the reaction to start. This is because Grignard reagents react with water, carbon dioxide, and oxygen and so they should be protected from air and moisture. Hence, the apparatus should be dried by a calcium chloride drying tube during the reaction.

The synthesis of benzoic acid using Grignard reagents occurs as shown below:



Some side reaction may occur since Grignard reagents will react with water and other proton donors. Not all moisture can be eliminated. Hence, benzene will be formed as a byproduct if moisture is present. The main impurity formed in this experiment is biphenyl which is formed because of coupling reaction of unreacted bromobenzene and Grignard reagent. But, both of these by products can be removed by extraction.



Grignard Reaction Lab Report

Roy G. Bossert, Wallace Reed Brode

Grignard Reaction Lab Report:

Enjoying the Song of Appearance: An Psychological Symphony within **Grignard Reaction Lab Report**

In a global taken by displays and the ceaseless chatter of instant transmission, the melodic elegance and mental symphony produced by the published term often disappear in to the background, eclipsed by the persistent noise and disturbances that permeate our lives. Nevertheless, situated within the pages of **Grignard Reaction Lab Report** a charming literary treasure full of organic thoughts, lies an immersive symphony waiting to be embraced. Crafted by an outstanding musician of language, that captivating masterpiece conducts readers on a mental journey, skillfully unraveling the concealed melodies and profound influence resonating within each carefully crafted phrase. Within the depths of this poignant examination, we shall examine the book is central harmonies, analyze its enthralling publishing type, and surrender ourselves to the profound resonance that echoes in the depths of readers souls.

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