

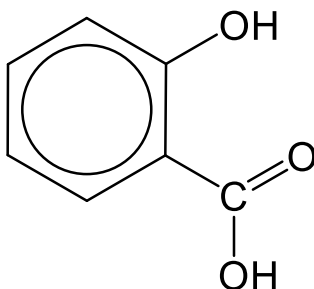
Chemistry 1105 Lab: ASA Synthesis

Goals:

- 1. To synthesize a sample of o-acetylsalicylic acid (ASA).**
- 2. Perform spot tests to qualify the purity.**
- 3. Next week will quantify purity.**

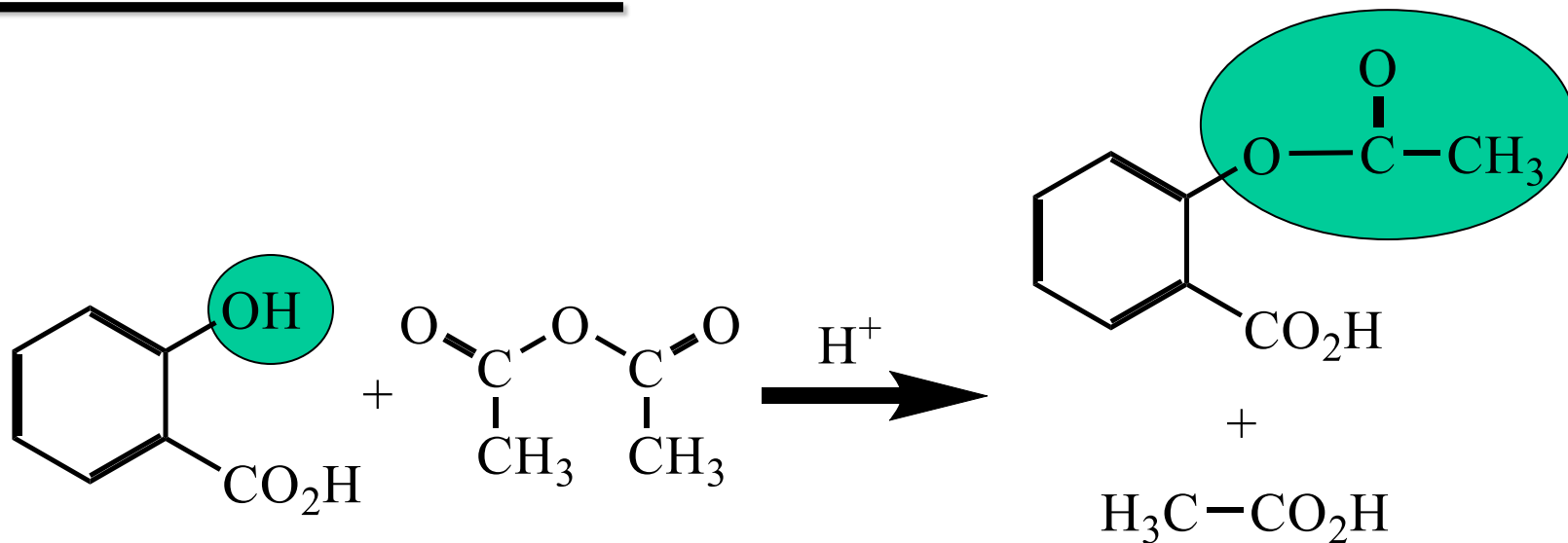
History of ASA:

- Extract of Willow trees known as remedy for headaches and other ailments.
- Contained salicylic acid.



- Caused stomach problems.
- Bayer company developed a derivative.

Synthesis of ASA:



**Salicylic
Acid**

**Acetic
Anhydride**

**ASA
+
Acetic Acid**

Percent Yield:

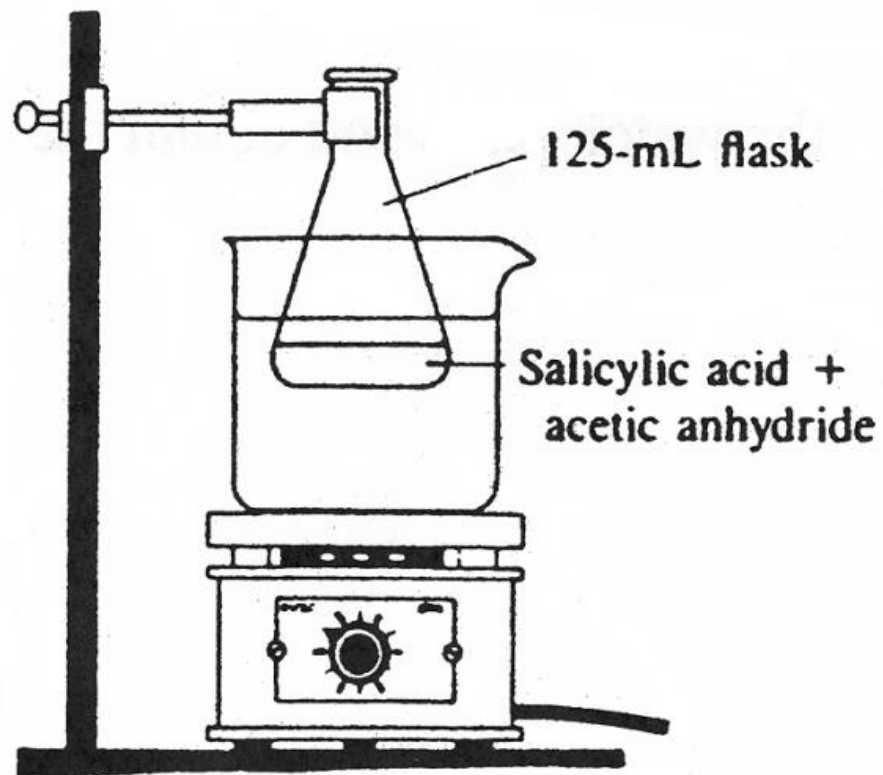
Moles of Salicylic Acid = moles ASA

Can calculate the mass of ASA that should be produced.

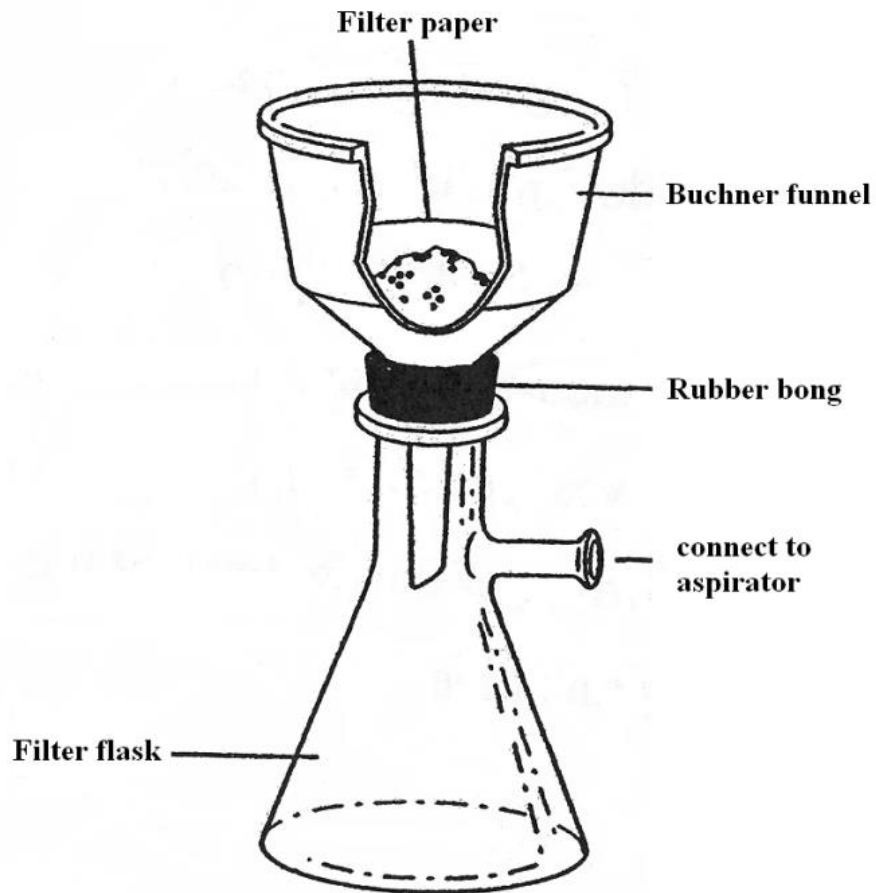
$$\text{Percent Yield} = \frac{\textit{actual yield}}{\textit{theoretical yield}} \times 100\%$$

$$\text{Percent Yield} = \frac{\textit{g of ASA obtained}}{\textit{theoretical yield of ASA (g)}} \times 100\%$$

Sythesis Setup:

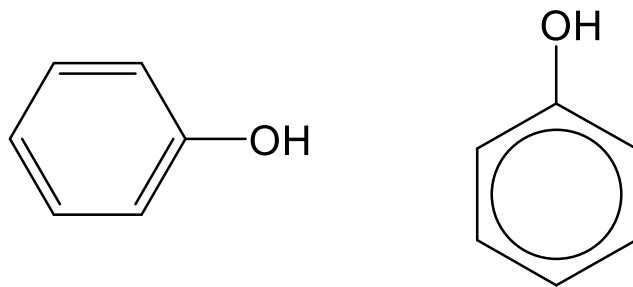


Vacuum Filtration:



Spot Test:

Ferric Chloride reacts with phenolic OH groups to produce a purple complex.



Positive result indicates unreacted salicylic acid.

NOTE: Label and store your product in a labelled beaker for next week.