

## Salicylic Acid

- Title:** Acid Ester Hydrolysis of Acetylsalicylic Acid
- Purpose:** The purpose of this procedure is to hydrolyze acetylsalicylic acid to salicylic acid, using acid for greater efficiency.
- Apparatus:** Hot plate stirrer,  
Heating mantle,  
Lab stand,  
Lab clamp,  
Rounded stir bar,  
Stir bar retriever,  
Water pump,  
Water reservoir,  
High vacuum grease,  
Toothpick,  
Vacuum pump  
Metric scale,  
Keck clamp,  
Kimwipes,  
  
Round bottom flask | 500mL | 24/40,  
Graduated cylinder | 10mL,  
Liebig condenser | 300mm | 24/40,  
Buchner funnel | Medium frit | 24/40,  
Erlenmeyer flask | 24/40,  
Stir rod,
- Materials:** Acetylsalicylic Acid | 45.04g,  
Hydrochloric Acid | 12.06M | 8.3mL,  
Distilled Water | 650mL,
- Safety:** Lab goggles, nitrile gloves, full-length clothing, close-toed shoes
- Procedure:** 1. Add the stir bar and all the distilled water, hydrochloric acid, and acetylsalicylic acid to the round bottom flask. Measure each component using the metric scale and graduated cylinder as needed. The exact amount of distilled water need not be exact.

2. Place the boiling flask into the heating mantle, which should already be fixed on top of the hotplate stirrer. Insert the liebig condenser vertically into the adapter of the flask, ensuring that the joints are well lubricated with high vacuum grease. Affix a keck clamp to the sealed joint.
3. Set the hotplate stirrer for moderate agitation and heat the solution until visible reflux occurs. Wait thirty minutes for the reaction to finish.
4. Remove heating and wait until the flask is completely cooled, at which point a white solid should have precipitated.
5. Disassemble the apparatus and perform a vacuum filtration, using the buchner funnel, erlenmeyer flask, and vacuum pump, on the solution remaining in the boiling flask.
6. Collect the crystals after allowing them to dry on a flat surface.