

Acid/Base Preparation	Identifier:	CSP-0002
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1. INTRODUCTION

This procedure guides the preparation of acid and base solutions in the ISU Chemistry Stockroom.

2. PRECAUTIONS AND LIMITATIONS

- 2.1. Add acid or base to water.
- 2.2. Wear proper protective equipment.

3. APPARATUS AND MATERIALS

- 3.1. Beaker large enough to hold the total volume of solution to be prepared
- 3.2. Magnetic stir bar
- 3.3. Magnetic stirrer
- 3.4. Graduated cylinder
- 3.5. Ice bath (for preparation of bases from solids)
- 3.6. Gloves
 - 3.6.1. Nitrile for common acids and bases
 - 3.6.2. Heavy/Butyl rubber gloves for sulfuric acid or NoChromix solution

4. REAGENTS

- 4.1. Sodium bicarbonate, 5% for spills and cleanup.

5. INSTRUCTIONS

- 5.1. Determine amount of water and acid or base needed.
 - 5.1.1. Measure water needed with a graduated cylinder of an appropriate size.
 - 5.1.2. Pour measured water into a beaker of an appropriate size to hold the total volume of solution.
 - 5.1.3. Add a magnetic stir bar.
- 5.2. For **Bases from solution and Acids:**
 - 5.2.1. Measure the acid required into a graduated cylinder of appropriate size.
 - 5.2.2. Place beaker on magnetic stirrer.
 - 5.2.2.1. Set stirrer high enough to create complete mixing.
 - 5.2.3. Slowly add acid or base to the water in the beaker.
 - 5.2.4. Stir for 5 minutes.



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5.3. For **Bases from solids:**

- 5.3.1. Measure solid base into a weighing boat/dish.
- 5.3.2. Place an ice bath onto a magnetic stirrer.
- 5.3.3. Place beaker from 5.1.2 into the ice bath.
- 5.3.4. Set stirrer high enough to create complete mixing.
- 5.3.5. Slowly add the solid base.

Note: *Add solid base in increments that will allow the material to completely dissolve before adding more.*

- 5.3.6. Stir for 5 minutes after last addition of base has dissolved.

6. Cleanup

- 6.1. Neutralize any spills or residues on the counter or in the hood with 5% sodium bicarbonate
- 6.2. Neutralize any remnants left in beakers or graduated cylinders with 5% sodium bicarbonate.
- 6.3. Clean glassware following glassware washing procedure.