**Synthesis of Azo Dyes**

**Introduction**

The main goal/ purpose for this particular lab is to perform an azo coupling , allowing to link two aromatic groups in a synthesis which in the end will result to have one of the 18 products.

***Wastes***

*Aqueous Waste: The used dye solutions*

***Safety Precautions***

*The naphthol derivatives and azo dyes are irritants, 1-naphthol is toxic. Sodium hydroxide and hydrochloric acid are corrosive, sodium nitrate is a toxic oxidizer.*

**Procedure**

1. Gather 2mL of the 6M HCl into an Erlenmeyer Flask
   1. Place it in an ice bath
2. Place 1.4mmol of animobenzensulfonic acid (A-C series) and 2.5mL of sodium carbonate in a flask.
   1. Set it on a heating pad
   2. Remove the heat and add 10 drops of 40% sodium nitrite solution
3. Slowly add aminobenzensulfonic acid solution into the chilled HCl solution
   1. Keep it in the ice bath and swirl it during addition.
4. In an Erlenmeyer flask place 1.3 mmol of phenol (1-6 series) and 1mL of 2M NaOH.
5. Chill the flask in an ice bath, swirl it
6. Add the suspension of diazonium salt (slowly) with a Pasteur pipet to the flask of dissolved naphthol.
   1. Swirl it, let it react for 10 minutes (you should notice a change in color)
7. Heat it on a hot plate for several minutes until the solid starts dissolving.
8. Add 0.5mg of sodium chloride
   1. Heat it for another 5 minutes
9. Pour the solution of the dye into a beaker.
10. Place a strip of multi-fiber fabric into the solution and keep it immersed while the solution is boiled for 5 minutes straight.
11. Remove it from the heating pad
12. Use forceps to take the fabric from solution
13. Rinse the fabric with tap water.
14. Let it dry and compare the color with labmates
15. Save the strip.