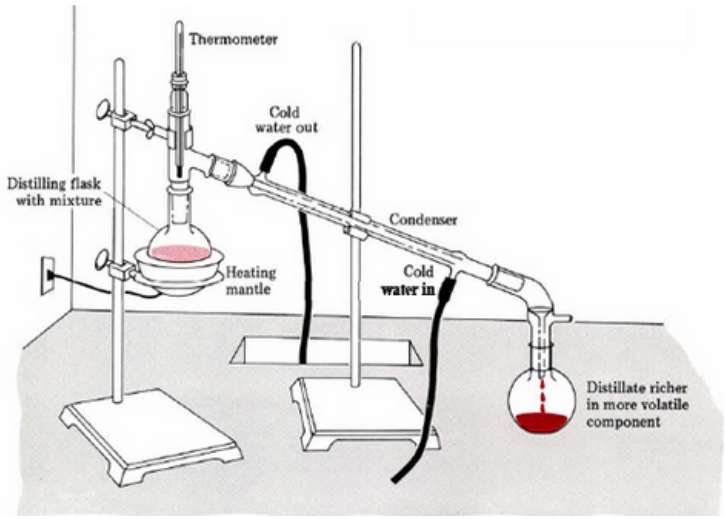
Organic Chemistry Lab Equipment and Techniques:

Distillation:

- Separation of components in a solution by?

- How do you know if your fractions are pure? What can be done to help make them pure?



https://www.youtube.com/watch?v=x-Bnq6U

Crystallization:

- Collection of product by?

- What is important as you plan your crystallization of product?

- Can all products be crystallized in attempt to purify them?

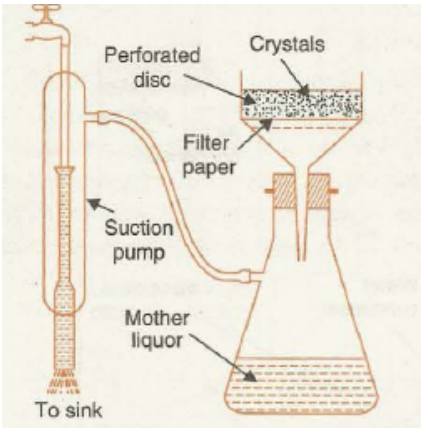


Fig. 39.4. Filtration with Buchner funnel and a suction pump.

Extraction: (liquid-liquid)

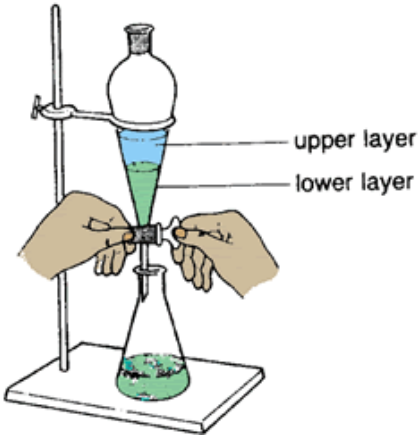
- Used when crystallization of the product did not occur

- Involves adding a 2nd solvent to the mixture that separates the product from the "phase" of solvent #1

a.) This causes the product to be in only 1 fraction of the solution

b.) This fraction will be removed and the product will continue to be isolated....
**What other isolation techniques do you think might come next?

https://www.youtube.com/watch?v=vcwfhDhLiQU



Filtering Techniques:

1.) **Pasteur Pipette:**

- Small amounts of solvent (less than 2 mL)
- Use of a pasteur pipette to suction the solvent from the bottom of the reaction test-tube (where the crystals are)

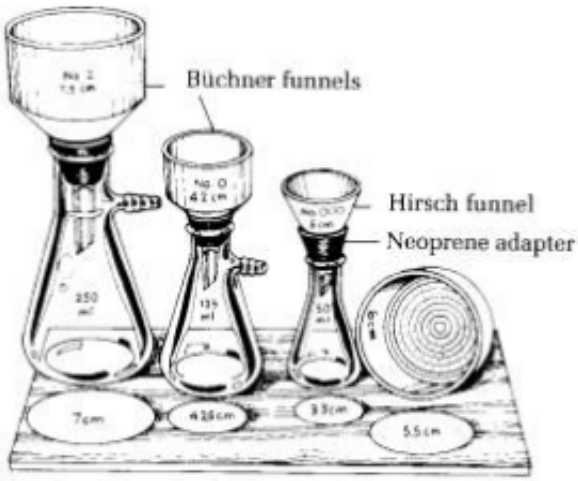
Benefits to pasteur pipette filtering?

2.) **Buchner Funnel Filtration:**

-Used to separate solids from liquids when a larger quantity of solvent and product are present

3.) **Hirsch Funnel Filtration:**

- Used to separate solids when more than 2 mL of solvent is present, but still a "small" amount

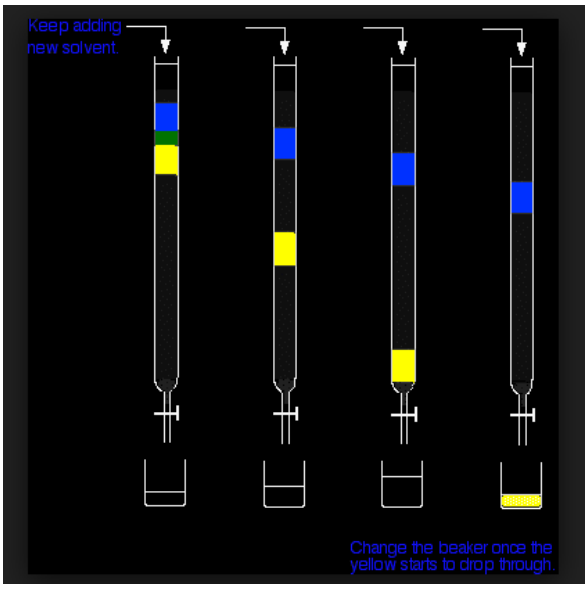


Column Chromatography:

- Separates components of a mixture through a column

- Can separate liquids from solids, even liquids from liquids (if they have different physical characteristics)

https://www.youtube.com/watch?v=P8Mmpb4OShw



Cleaning Glassware:

1.) What to clean it with?

2.) How fast should I clean glassware after lab?

3.) What if it didn't come clean with my first leaning attempt?

4.) How do I dry my glassware?

What pieces of Equipment were in my Organic Chemistry Glassware Kit?:

Care of our Organic Chemistry equipment:

1.) Lubricate joints before putting them together (Why?)

2.) Don't allow lubricant to enter the inside of the container/ device (Why?)

3.) If pouring from container to container, remove the lubricant around the rim 1st (why?)

3 Types of Lubricant are often used:

a.) Hydrocarbon grease - good for relatively low temp experiments, easily removed with acetone during clean-up

b.) Silicone grease - preferred for high temp settings - remove with chloroform during clean-up

c.) Glycerin - long term, water soluble - clean-up with water