

(2): Extraction efficiency

Purpose of the experiment

Identification of a number of times necessary to obtain a quantitative extraction (99.9%) and answer these questions:

- Is extraction once is enough using a large amount of the organic solvent?
- Is extraction once is enough using a small amount of the organic solvent?
- Is extraction many times using small amounts of solvent at a time is enough?

Tools and materials used

Separatory funnel 100ml, pipette 10ml, Burette, funnel, conical flask, benzoic acid, sodium hydroxide, Diethyl ether, Phenolphthalein indicator.

Procedure

First:

1. Transfer 10ml of benzoic acid into separatory funnel, then add 30ml from Diethyl ether using cylinder.
2. Shake gently and wait until the separation of layers.
3. Down precisely the aqueous layer in conical flask, then titrate with sodium hydroxide (add two drops from ph.ph) until the pink color appears.
4. Calculate the remaining concentration from acid in aqueous layer.

Second:

1. Transfer 10ml of benzoic acid into separatory funnel, then add 10ml from Diethyl ether using cylinder.
2. Shake gently and wait until the separation of layers.
3. Down precisely the aqueous layer in conical flask, then titrate with sodium hydroxide (add two drops from ph.ph) until the pink color appears.
4. Calculate the remaining concentration from acid in aqueous layer.

Third:

1. Transfer 10ml of benzoic acid into separatory funnel, then add 10ml from Diethyl ether using cylinder.
2. Shake gently and wait until the separation of layers.
3. Take aqueous layer, add 10ml from Diethyl ether, shake gently and wait until the separation of layers.
4. Again, take aqueous layer, add 10ml from diethyl ether, shake gently and wait until the separation of layers.

5. Down precisely the aqueous layer in conical flask, then titrate with sodium hydroxide (add two drops from ph.ph) until the pink color appears.
6. Calculate the remaining concentration from acid in aqueous layer.