

Application of Extraction:

5 ml of a solution of benzoic acid and acetanilide in chloroform is added to the separation funnel. Extraction is carried out by adding 5 ml of a 10% NaOH solution. The separating funnel is mixed several times, in the form of 8 or ∞ . Wait until the two phases are separated.

The bottom phase is taken until the line separating the two phases reaches the mouth of the tap of the separation funnel (bottom phase: chloroform phase).

This process is repeated 3 times with the same separated chloroform liquid (remaining constant). (adding new 5 ml NaOH each time (5ml*3)).

Result: 15 ml NaOH phase

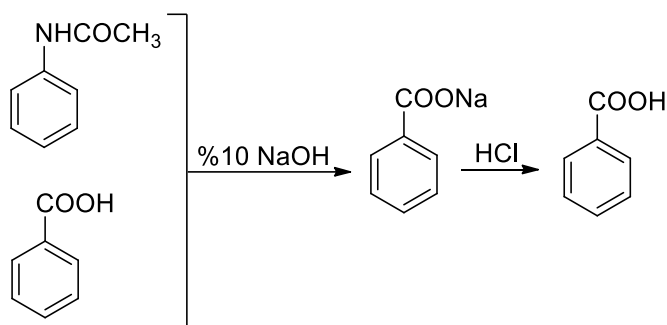
5 ml of chloroform phase

Because chloroform can hold some NaOH in it, It is extracted 3 times with distilled water.

Distilled waters are discarded (Total 15 ml).

After all; acetanilid is in the chloroform layer, and in the NaOH layer, benzoic acid is present as sodium salt. These two phases are checked by TLC.

TLC solvent: Chloroform: ethylacetate (8: 2)



Questions

1. Describe and classify extraction.
2. What can be done if an emulsion is formed?
3. 50 ml solution of 5 g of ethyl benzoate in water at 20 C, is extracted with 100 ml of chloroform and the distribution coefficient of ethyl benzoate is 2;
 - a) What is the amount of ethyl benzoate passing through chloroform as a result of extracting only once?
 - b) When the same amount of chloroform is extracted 4 times, what is the amount of ethyl benzoate passing through chloroform?
 - c) What is the amount of ethyl benzoate passing through chloroform when 100 ml of chloroform is used in 3 times?

