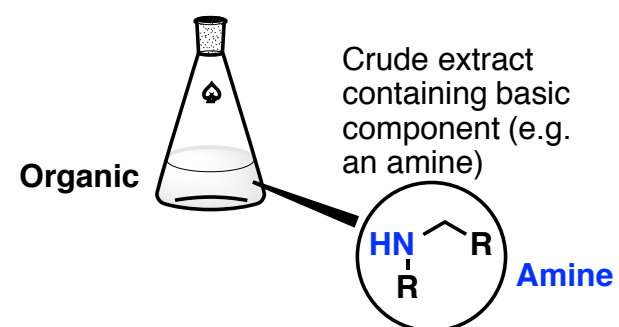
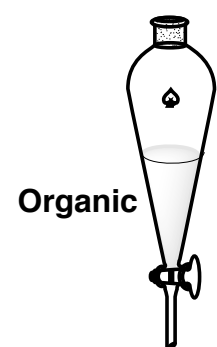


### Separating a Basic Compound (e.g. Amine) From A Crude Mixture

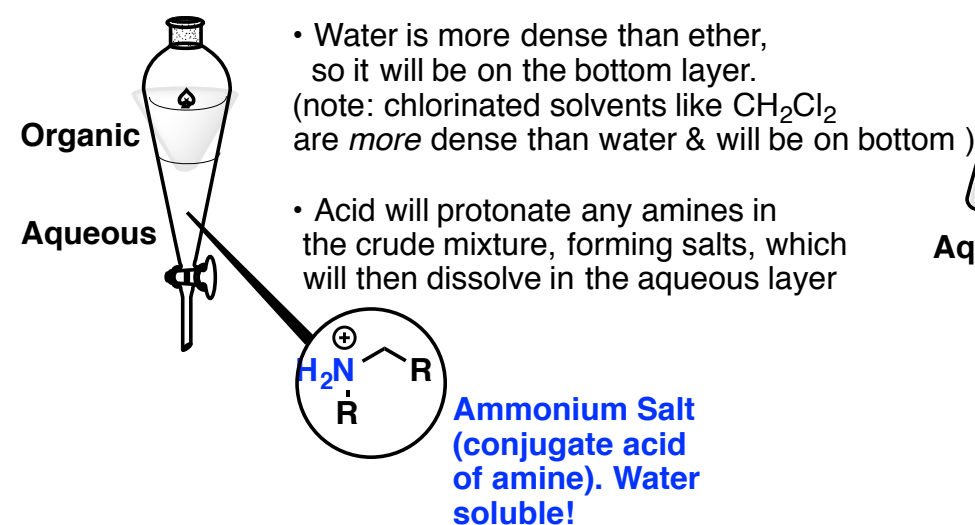
**Step 1: Dissolve crude mixture in organic solvent (e.g. diethyl ether,  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ )**



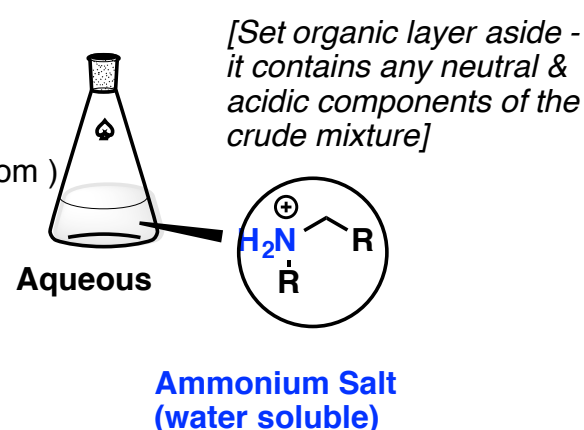
**Step 2: Transfer to Separatory Funnel**



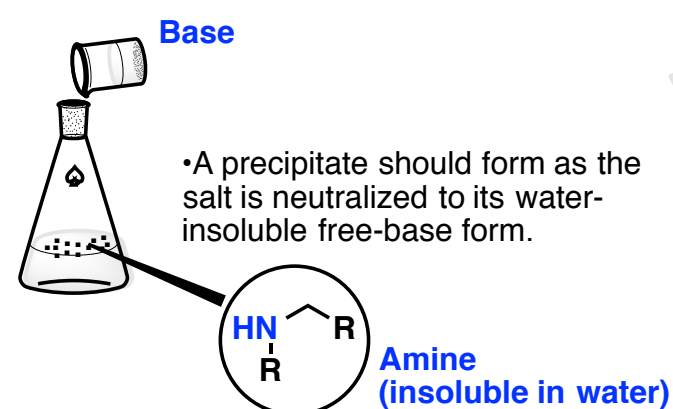
**Step 3: Add solution of aqueous acid (e.g. 2M  $\text{H}_2\text{SO}_4$ ) and shake vigorously**



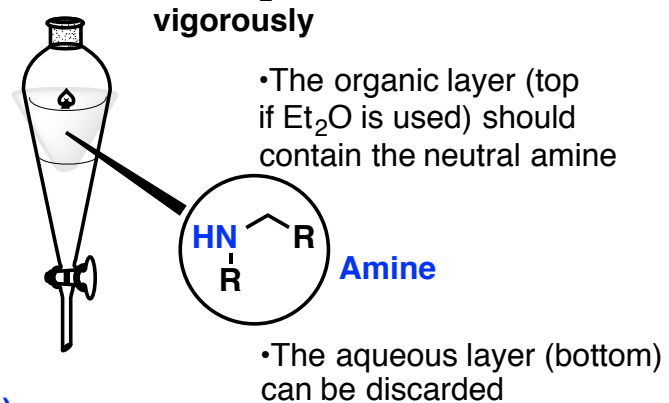
**Step 4: Collect Aqueous Layer**



**Step 5: Adjust pH of aqueous layer to pH >14 with concentrated base (e.g. 6M NaOH)**



**Step 6: Transfer to separatory funnel, add organic solvent (e.g.  $\text{Et}_2\text{O}$ ) and shake vigorously**



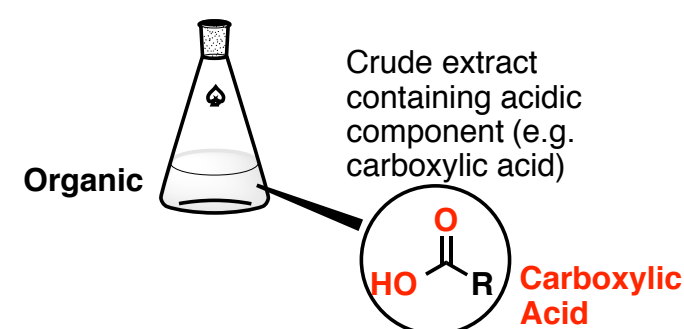
**Step 7: Collect the organic layer and remove solvent (e.g. using a rotary evaporator)**



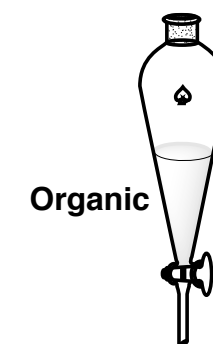
### Separating an Acidic Compound (e.g. Carboxylic Acid) from A Crude Mixture

This is conceptually similar to the procedure on the left, except that we will convert the neutral compound to a salt by using base, and do the final neutralization using acid

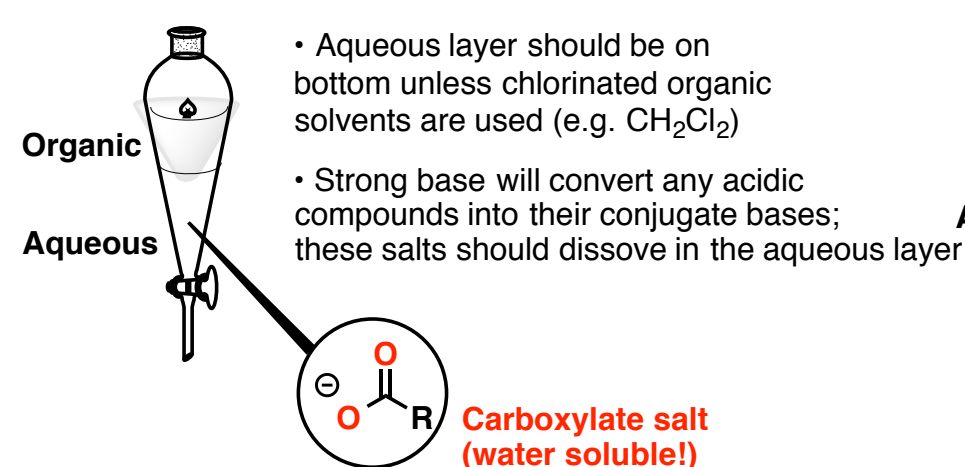
**Step 1: Dissolve crude mixture in organic solvent (e.g. diethyl ether,  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ )**



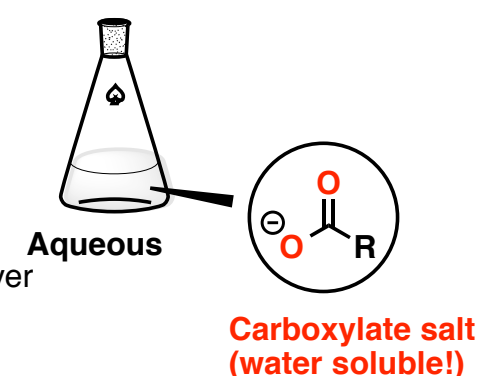
**Step 2: Transfer to Separatory Funnel**



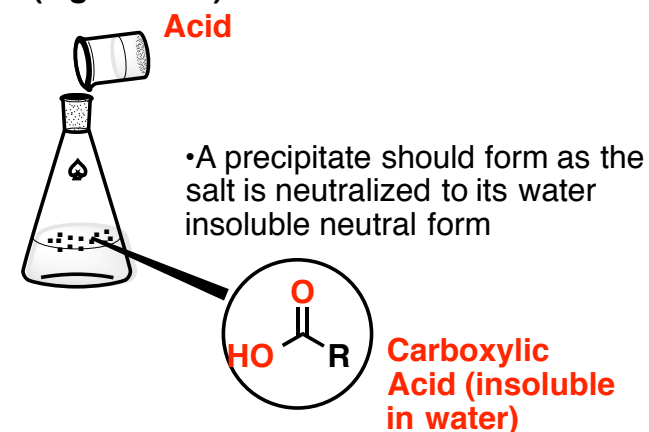
**Step 3: Add solution of strong base (e.g. 2M NaOH) to adjust pH to 14 and shake vigorously**



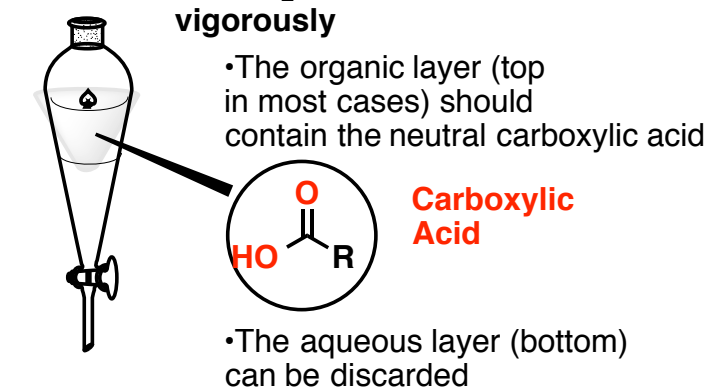
**Step 4: Collect Aqueous Layer (set organic layer aside)**



**Step 5: Adjust pH of aqueous layer to pH 1 with concentrated acid (e.g. 6M HCl)**



**Step 6: Transfer to separatory funnel, add organic solvent (e.g.  $\text{Et}_2\text{O}$ ) and shake vigorously**



**Step 7: Collect the organic layer and remove solvent (e.g. using a rotary evaporator)**

