# Lab-report #2

Date: 97-09-26 Time: 12.55-14.20

### *Common anion reactions:*

### Work to be done:

- To find the reagent to five different anions by laboration.

### Chemicals and apparatus:

- Ions; carbonate ion, sulphate ion, cloride ion, bromide ion and idodide ion.
- $Na_2CO_3$
- $Ba(NO_3)_2$
- $HNO_3$
- $NaSO_4$
- $CuSO_4$
- $Al_2(SO_4)_3$
- $AgNO_3$

## Lab:

**First lab:** $Na_2CO_3 + Ba(NO_3)_2 \rightarrow NaNO_3(aq) + \underline{BaCO_3}(s) \Rightarrow$ REACTION, precipitation.
Then: Remove the liquid ($NaNO_3$).
And: Add $HNO_3$.
Reaction: $BaCO_3 + 2HNO_3 \rightarrow Ba(NO_3)_2 + CO_2 + H_2O$.

**Second lab:** $Na_2SO_4 + Ba(NO_3)_2 \rightarrow \underline{BaSO_4} + Na_2(NO_3)_2 \Rightarrow$ REACTION, precipitation.
$CuSO_4 + Ba(NO_3)_2 \rightarrow \underline{BaSO_4} + Cu(NO_3)_2 \Rightarrow$ REACTION, precipitation.
$Al_2(SO_4)_2 + Ba(NO_3)_2 \rightarrow \underline{BaSO_4} + Al_2(NO_3)_2 \Rightarrow$ REACTION, precipitation.
Then: Remove the liquid ( $Na_2NO_3$, $Cu(NO_3)_2$ and $Al_2(NO_3)_2$ )
And: Add $HNO_3$
Reaction: NO REACTION!

**Third lab:** Test how Cl, Br and I react to $AgNO_3$.
Result: AgCl, AgBr and AgI and $KNO_3$.
Then: Remove the liquid and then try to solve these precipitations in $NH_3$ and $Na_2S_2O_3$.
Result: AgCl is solved in $NH_3$ and AgBr is solved in $Na_2S_2O_3$ and AgI is not solved at all.

| ***Anion*** | ***Reagent*** | ***Formula of precipitation*** | ***Solved in*** |
|---|---|---|---|
| $\mathbf{CO_3^{2-}}$ | $Ba^{2-}$ | $BaCO_3$ | $HNO_3$ |
| $\mathbf{SO_4^{2-}}$ | $Ba^{2-}$ | $BaSO_4$ | – |
| $\mathbf{Cl^-}$ | $Ag^+$ | AgCl | $NH_3$ |
| $\mathbf{I^-}$ | $Ag^+$ | AgI | – |
| $\mathbf{Br^-}$ | $Ag^+$ | AgBr | $Na_2S_2O_3$ |