

AT Chemistry

Qualitative Analysis Post Lab Questions:

1. In our Qualitative Analysis scheme we precipitated the silver ion as an insoluble chloride salt.
 - a) What precipitating reagent was used?
 - b) How did you ensure that all of the silver ion was precipitated?
 - c) What reagent was then added to dissolve the precipitate?
 - d) What is the name and chemical formula of the aqueous complex ion that was formed?

2. We precipitated the ferric ion as an insoluble hydroxide.
 - a) What reagent was used to precipitate the aqueous ferric ion?
 - b) Could we have used a solution of ammonia to precipitate the aqueous ferric ion? Why or why not?
 - c) How did you know when all of the aqueous ferric ion was precipitated?
 - d) What reagent was added to dissolve the ferric hydroxide solid back to the aqueous ferric ion?
 - e) What is the chemical formula and name of the complex ion formed between ferric ion and water?
 - f) What reagent was used as a confirmatory chemical test for the presence of aqueous ferric ion?
 - g) What was observed when the reagent was added?
 - h) Give the chemical formula of the product that was formed.

3. If you suspect water is contaminated with copper(II) ion,
 - a) What reagent can you add to the water to confirm the presence of the cupric ion and what color change would you observe?
 - b) Write a simple balanced chemical equation for the reaction between aqueous copper(II) ion and the reagent described in ((a). Identify the Lewis acid and the Lewis base in this reaction, and name the product formed. Include phases.

4. When aqueous sodium hydroxide is added to a solution containing only zinc ion,
- a) Why does a precipitate not form?
 - b) Give the chemical formula and name of the product formed.
 - c) Why must HCl be added to the above solution before proceeding with the confirmatory test for the presence of zinc ion?
 - d) How do you know if you added enough of the HCl?
 - e) What should occur when you add the aqueous potassium ferricyanide to the aqueous solution of zinc ion confirming its presence?
5. If we added plumbous ion to our original mixture of the four cations, what would occur upon the addition of hydrochloric acid to this mixture of cations?