

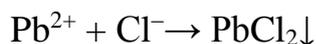
Answer on Question #57996, Chemistry / General Chemistry

I need help to develop a schemes flowchart to separate Al^{3+} , Fe^{3+} , Ni^{2+} , Pb^{2+} using the following reagents HCl , NH_3 and NaOH . Three steps are needed to achieve a separation of the four cations from each use of the reagents (HCl , NH_3 , or NaOH in each step). Separate Pb^{2+} first

Solution:

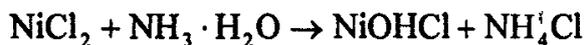
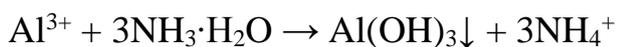
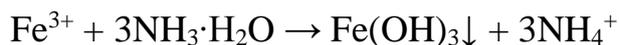
1) Add to the HCl solution to a strongly acidic medium.

Pb^{2+} by reacting c HCl forms a precipitate PbCl_2 :



while remaining cations remain in solution.

2) To a solution after separation of precipitate PbCl_2 add NH_3 solution until the characteristic smell .. Moreover, all three form a cation precipitation:



A lot of solution of ammonia nickel will be dissolved:

3) To the precipitate of hydroxides of iron and aluminum to add NaOH solution. Thus aluminum will go into solution:

