Appendix 1: Developing A Set Of Solubility Rules (Student BLM)

Develop your own procedure to create a set of solubility rules. The solutions the class will use include:

Set A: silver ions (Ag^+), barium ions (Ba^{2+}), sodium ions (Na^+), ammonium ions (NH_4^+), calcium ions (Ca^{2+}), chloride ions (Cl^-), carbonate ions (CO_3^{2-}), sulfate ions (SO_4^{2-}), nitrate ions (NO_3^-), and phosphate ions (PO_4^{3-})

Set B: zinc ions (Zn^{2+}), iron ions (Fe^{3+}), sodium ions (Na^+), magnesium ions (Mg^{2+}), potassium ions (K^+), chloride ions (Cl^-), hydroxide ions (OH^-), bromide ions (Br^-), carbonate ions (CO_3^{2-}), and acetate ions ($C_2H_3O_2^-$)

Hint: Before you begin mixing solutions, set up a grid to organize your observations.

Follow-up questions

1. Chemists have developed a set of solubility rules with respect to the solubility of anions with numerous cations.
    a) List the cations that did not form any precipitates.
    b) For each anion, list the cations with which it was insoluble (formed a precipitate).

2. List the set of solubility rules that you have developed.