

Making Ionic Compounds

PSI Chemistry

Name _____

Purpose

To study the formation of ionic compounds and derive the formula of the ionic compounds formed.

Materials

- Reaction well plate
- Solution A (Fe^{3+} ion – $\text{Fe}(\text{OH})_3$)
- Solution B (Ag^+ ion – AgNO_3)
- Solution C (Pb^{2+} ion – $\text{Pb}(\text{NO}_3)_2$)
- Solution X (CO_3^{2-} ion – $\text{Na}_2(\text{CO}_3)$)
- Solution Y (OH^- ion – NaOH)
- Solution Z (PO_4^{3-} ion- $\text{Na}_3(\text{PO}_4)$)

Procedure

1. Label three columns A, B, and C.
2. Add 5 drops (0.5 mL) of solutions A, B, and C to their respective wells.
3. Add 5 drops of solution X to one well of A, B, and C. Observe each for the formation of a solid.
4. Repeat Step 3 using solutions Y and Z.
5. Make a 3 x 3 grid in which to record your observations. Label the columns A, B, and C while labeling the rows X, Y, and Z. Write a short description of the solid you observed forming in each of the wells.

Analysis and Conclusions

1. Can mixing a cation and anion lead to the formations of an insoluble (does not dissolve in water) ionic compound?
2. Write the correct formula for each ionic compound formed.
3. Name each compound formed.
4. Do you think mixing together a solution of any cation with a solution of any anion will always lead to the formation of an insoluble compound?
5. Write the formulas and names of the products formed from reactions between each cation and anion provided in the table below.

	Fe^{3+}	Ag^{+}	Pb^{2+}
CO_3^{2-}			
OH^{-}			
PO_4^{3-}			