

Name: \_\_\_\_\_

## Solubility and Precipitation Reactions

1. On the basis of solubility rules indicate if the substance is (aq) soluble or (ppt) insoluble in water:

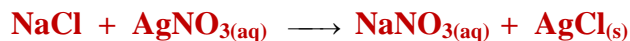
- |  |  |
|--|--|
| a.) <input type="checkbox"/> aq <input type="checkbox"/> ppt Na <sub>2</sub> SO <sub>4</sub> | k.) <input type="checkbox"/> aq <input type="checkbox"/> ppt Ni(OH) <sub>2</sub>               |
| b.) <input type="checkbox"/> aq <input type="checkbox"/> ppt ammonium phosphate              | l.) <input type="checkbox"/> aq <input type="checkbox"/> ppt mercury(II) nitrate               |
| c.) <input type="checkbox"/> aq <input type="checkbox"/> ppt Cu <sub>3</sub> PO <sub>4</sub> | m.) <input type="checkbox"/> aq <input type="checkbox"/> ppt BaSO <sub>4</sub>                 |
| d.) <input type="checkbox"/> aq <input type="checkbox"/> ppt lead(II) sulfate                | n.) <input type="checkbox"/> aq <input type="checkbox"/> ppt zinc acetate                      |
| e.) <input type="checkbox"/> aq <input type="checkbox"/> ppt AgOH                            | o.) <input type="checkbox"/> aq <input type="checkbox"/> ppt Cr(NO <sub>3</sub> ) <sub>6</sub> |
| f.) <input type="checkbox"/> aq <input type="checkbox"/> ppt mercury(I) chloride             | p.) <input type="checkbox"/> aq <input type="checkbox"/> ppt lead(II) chloride                 |
| g.) <input type="checkbox"/> aq <input type="checkbox"/> ppt AgCl                            | q.) <input type="checkbox"/> aq <input type="checkbox"/> ppt Li <sub>2</sub> CO <sub>3</sub>   |
| h.) <input type="checkbox"/> aq <input type="checkbox"/> ppt magnesium sulfate               | r.) <input type="checkbox"/> aq <input type="checkbox"/> ppt osmium(VIII) nitrate              |
| i.) <input type="checkbox"/> aq <input type="checkbox"/> ppt Fe <sub>2</sub> S <sub>3</sub>  | s.) <input type="checkbox"/> aq <input type="checkbox"/> ppt Al(OH) <sub>3</sub>               |
| j.) <input type="checkbox"/> aq <input type="checkbox"/> ppt iron(II) carbonate              | t.) <input type="checkbox"/> aq <input type="checkbox"/> ppt ammonium sulfide                  |

2. Write the products of dissociation for the following salts. If insoluble write *none*.

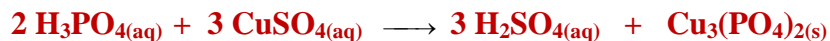
- a.)  $\text{CuSO}_4 \rightarrow \text{Cu}^{2+} + \text{SO}_4^{2-}$
- b.)  $\text{HCl} \rightarrow \text{H}^+ + \text{Cl}^-$
- c.)  $\text{NH}_4\text{C}_2\text{H}_3\text{O}_2 \rightarrow \text{NH}_4^+ + \text{C}_2\text{H}_3\text{O}_2^-$
- d.)  $\text{Na}_3\text{PO}_4 \rightarrow 3\text{Na}^+ + \text{PO}_4^{3-}$
- e.)  $\text{Hg}_2(\text{OH})_2 \rightarrow \text{Insoluble}$
- f.) potassium sulfide  $\rightarrow 2\text{K}^+ + \text{S}^{2-}$
- g.) lead(II) sulfate  $\rightarrow \text{Insoluble}$
- h.) silver chloride  $\rightarrow \text{Insoluble}$
- i.) sodium carbonate  $\rightarrow 2\text{Na}^+ + \text{CO}_3^{2-}$
- j.) chromium(III) nitrate  $\rightarrow \text{Cr}^{3+} + 3\text{NO}_3^-$

3. Complete the word equation then write a balanced chemical equation that includes phase notation. Circle the precipitate. If no reaction takes place write *No Reaction*

a.) Sodium chloride and silver nitrate →



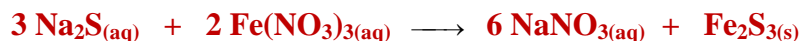
b.) Phosphoric acid and copper(II) sulfate →



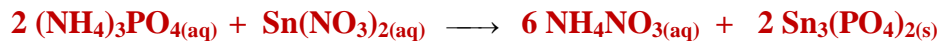
c.) sodium chloride and magnesium bromide →

**No Reaction**

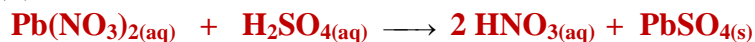
d.) sodium sulfide and iron(III) nitrate →



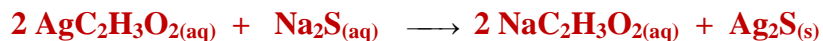
e.) ammonium phosphate and tin(II) nitrate →



f.) lead(II) nitrate and sulfuric acid →



g.) silver acetate and sodium sulfide →



h.) ammonium carbonate and sodium phosphate →

**No Reaction**

i.) ammonium phosphate and lead(II) acetate →

