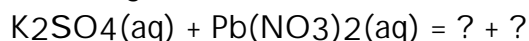


**Solubility Rules for some ionic compounds in water**

<b><i>Soluble Ionic Compounds</i></b>	
1.	All sodium (Na <sup>+</sup> ), potassium (K <sup>+</sup> ) and ammonium (NH <sub>4</sub> <sup>+</sup> ) salts are SOLUBLE.
2.	All nitrate (NO <sub>3</sub> <sup>-</sup> ), acetate (CH <sub>3</sub> CO <sub>2</sub> <sup>-</sup> ), chlorate (ClO <sub>3</sub> <sup>-</sup> ), and perchlorate (ClO <sub>4</sub> <sup>-</sup> ) salts are SOLUBLE.
3.	All chloride (Cl <sup>-</sup> ), bromide (Br <sup>-</sup> ), and iodide (I <sup>-</sup> ) salts are SOLUBLE - EXCEPT those also containing: lead, silver, or mercury (I), (Pb <sup>+2</sup> , Ag <sup>+</sup> , Hg <sub>2</sub> <sup>+2</sup> ) which are NOT soluble.
4.	All fluoride (F <sup>-</sup> ) salts are SOLUBLE - EXCEPT those also containing: magnesium, calcium, strontium, barium, or lead (Mg <sup>+2</sup> , Ca <sup>+2</sup> , Sr <sup>+2</sup> , Ba <sup>+2</sup> , Pb <sup>+2</sup> ) which are NOT soluble.
5.	All sulfate (SO <sub>4</sub> <sup>-2</sup> ) salts are SOLUBLE - EXCEPT those also containing: calcium, silver, mercury (I), strontium, barium, or lead (Ca <sup>+2</sup> , Ag <sup>+</sup> , Hg <sub>2</sub> <sup>+2</sup> , Sr <sup>+2</sup> , Ba <sup>+2</sup> , Pb <sup>+2</sup> ), which are NOT soluble.
<b><i>Not Soluble Ionic Compounds</i></b>	
6.	Hydroxide (OH <sup>-</sup> ) and oxide (O <sup>-2</sup> ) compounds are NOT SOLUBLE - EXCEPT those also containing: sodium, potassium or barium (Na <sup>+</sup> , K <sup>+</sup> , Ba <sup>+2</sup> ), which are soluble.
7.	Sulfide (S <sup>-2</sup> ) salts are NOT SOLUBLE - EXCEPT those also containing: sodium, potassium, ammonium, or barium (Na <sup>+</sup> , K <sup>+</sup> , NH <sub>4</sub> <sup>+</sup> , Ba <sup>+2</sup> ), which are soluble.
8.	Carbonate (CO <sub>3</sub> <sup>-2</sup> ) and phosphate (PO <sub>4</sub> <sup>-3</sup> ) salts are NOT SOLUBLE EXCEPT those also containing: sodium, potassium or ammonium (Na <sup>+</sup> , K <sup>+</sup> , NH <sub>4</sub> <sup>+</sup> ) which are soluble.

Precipitation Reactions ... Predicting



1. Identify the ions that are in the original solutions:

2. Swap them and write the write resultant compounds as possible products:

3. Is one or both of the new salts insoluble ... solubility guidelines.

4. Now write and balance the chemical equation: