

Student Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Comprehensive Chemical Product Prediction 1 SOLUTIONS

- $\text{Li}_{(s)} + \text{H}_2\text{O}_{(l)} \rightarrow \text{LiOH}_{(s)} + \text{H}_2_{(g)}$
- ammonium sulfide reacts with calcium nitrate  
 $(\text{NH}_4)_2\text{S} + \text{Ca}(\text{NO}_3)_2 \rightarrow \text{No Reaction (2 soluble products)}$
- iodine gas reacts with magnesium bromide  
 $\text{I}_2 + \text{MgBr}_2 \rightarrow \text{No Reaction (Br is above I on the activity series)}$
- lithium metal and aqueous oxygen gas react  
 $\text{Li} + \text{O}_2 \rightarrow \text{Li}_2\text{O}$
- $\text{Al}_{(s)} + \text{HNO}_{3(aq)} \rightarrow \text{Al}(\text{NO}_3)_3 + \text{H}_2$
- $\text{AlCl}_{3(s)} + \text{heat} \rightarrow \text{No Reaction (no template for binary salts)}$
- Calcium combines with aluminum phosphate  
 $\text{Ca} + \text{AlPO}_3 \rightarrow \text{Ca}_3(\text{PO}_3)_2 + \text{Al}$
- Nitric acid neutralizes barium hydroxide  
 $\text{HNO}_{3(aq)} + \text{Ba}(\text{OH})_{2(aq)} \rightarrow \text{Ba}(\text{NO}_3)_{2(aq)} + \text{H}_2\text{O}_{(l)}$
- Water is subjected to electric shock and decomposes  
 $\text{H}_2\text{O} \rightarrow \text{H}_2 + \text{O}_2$
- $\text{Pb}(\text{NO}_3)_{2(aq)} + \text{H}_2\text{S}_{(aq)} \rightarrow \text{PbS}_{(l)} + \text{HNO}_{3(aq)}$
- $\text{H}_{2(g)} + \text{Cl}_{2(g)} \rightarrow \text{HCl}$
- $\text{C}_3\text{H}_7\text{OH}_{(l)} + \text{O}_{2(g)} \rightarrow \text{CO}_{2(g)} + \text{H}_2\text{O}_{(g)}$
- potassium metal reacts with hydrofluoric acid  
 $\text{K} + \text{HF} \rightarrow \text{H}_2 + \text{KF}$
- $\text{Zn}_{(s)} + \text{H}_3\text{PO}_{4(aq)} \rightarrow \text{Zn}_3(\text{PO}_4)_2 + \text{H}_2$
- $\text{Na}_{(s)} + \text{Br}_{2(l)} \rightarrow \text{NaBr}$
- $\text{NH}_4\text{NO}_{3(aq)} + \text{NaCl}_{(aq)} \rightarrow \text{No Reaction (2 soluble products)}$
- $\text{Ca}_{(s)} + \text{O}_{2(g)} \rightarrow \text{CaO}$
- lead(II) nitrate reacts with phosphoric acid  
 $\text{Pb}(\text{NO}_3)_{2(aq)} + \text{H}_3\text{PO}_{4(aq)} \rightarrow \text{HNO}_{3(aq)} + \text{Pb}_3(\text{PO}_4)_{2(l)}$
- lead(II) chloride reacts with ammonium hydroxide  
 $\text{PbCl}_{2(s)} + \text{NH}_4\text{OH}_{(aq)} \rightarrow \text{No Reaction (insoluble reactant)}$
- $\text{NaF}_{(l)} \rightarrow \text{No Reaction (no template for binary salts)}$