

- Predict the products of each of the following reactions. In each case, provide a **balanced** chemical equation to properly represent the reaction. Write NR for reactions that will not proceed, and be sure to **include the states** for the products.
 - $\text{NH}_4\text{Br}_{(\text{aq})} + \text{Ca}(\text{OH})_{2(\text{aq})} \rightarrow$
 - $\text{LiClO}_{3(\text{aq})} + \text{Al}(\text{NO}_3)_{3(\text{aq})} \rightarrow$
 - $\text{Ca}_{(\text{s})} + \text{FeCl}_{3(\text{aq})} \rightarrow$
 - $\text{K}_2\text{CO}_{3(\text{aq})} + \text{H}_2\text{SO}_{4(\text{aq})} \rightarrow$
 - $\text{Al}_2(\text{SO}_4)_{3(\text{aq})} + \text{K}_3\text{PO}_{4(\text{aq})} \rightarrow$
 - $\text{Zn}_{(\text{s})} + \text{HCl}_{(\text{aq})} \rightarrow$
- Predict the product or products that are likely to form in each of the following reactions. In each case, provide a **balanced** chemical equation to properly represent the reaction. States CAN NOT be accurately predicted for these products so they do not need to be included.
 - MgO and H₂O
 - Au and P
 - AgCl
 - H₂C₂O₄•2H₂O
 - Be(NO₃)₂
- What is the difference between complete and incomplete combustion?
- Write the balanced chemical equation for the complete combustion of C₁₀H_{22(l)}. Be sure to include the **states**.
- Write the balanced chemical equation for the incomplete combustion of C₄H_{10(g)}. Assume that **all 4 possible products** are formed in the reaction and there are **4 molecules of oxygen** available for the reaction. Be sure to include the **states**.
- Hard Water Article** questions # 1, 2, 5, 6, 7, 10.