

Predicting Products of Reactions

(Honors Chemistry)

- Given the reactant(s), predict the product(s) of the following chemical reactions.
- You should write your final answer as a balanced chemical equation in the space provided.

1. $C_8H_{18} + O_2 \rightarrow$ $\underline{2} C_8H_{18} + \underline{25} O_2 \rightarrow \underline{16} CO_2 + \underline{18} H_2O$	Combustion
2. Mercurous Sulfate + Ammonium Nitrate \rightarrow $Hg_2SO_4 + \underline{2} NH_4NO_3 \rightarrow \underline{2} HgNO_3 + (NH_4)_2SO_4$	Double - Replacement
3. Potassium + Fluorine \rightarrow $\underline{2} K + F_2 \rightarrow \underline{2} KF$	Combination (Synthesis)
4. Potassium Nitrate + Zinc Phosphate \rightarrow $\underline{6} KNO_3 + Zn_3(PO_4)_2 \rightarrow \underline{3} Zn(NO_3)_2 + \underline{2} K_3PO_4$	Double - Replacement
5. Lithium Oxide + Water \rightarrow $Li_2O + H_2O \rightarrow \underline{2} LiOH$	Combination (Synthesis)
6. Sodium Chloride \rightarrow $\underline{2} NaCl \rightarrow \underline{2} Na + Cl_2$	Decomposition
7. $C_6H_{14} + O_2 \rightarrow$ $\underline{2} C_6H_{14} + \underline{19} O_2 \rightarrow \underline{12} CO_2 + \underline{14} H_2O$	Combustion
8. Na + Copper (II) chloride \rightarrow $\underline{2} Na + CuCl_2 \rightarrow Cu + \underline{2} NaCl$	Single - Replacement
9. Iron (III) Iodide + Copper (II) Nitrate \rightarrow $\underline{2} FeI_3 + \underline{3} Cu(NO_3)_2 \rightarrow \underline{2} Fe(NO_3)_3 + \underline{3} CuI_2$	Double - Replacement

10. Copper (II) + Sulfuric Acid → $\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow$	No Reaction
11. Lead (II) + Potassium Chlorate → $\text{Pb} + \text{KClO}_3 \rightarrow$	No Reaction
12. Sulfur Dioxide + Water → $\text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_3$	Combination (Synthesis)
13. carbon tetrahydride + oxygen → $\text{CH}_4 + \underline{2}\text{O}_2 \rightarrow \text{CO}_2 + \underline{2}\text{H}_2\text{O}$	Combustion
14. Copper (II) + bromine → $\text{Cu} + \text{Br}_2 \rightarrow \text{CuBr}_2$	Combination (Synthesis)
15. Sodium Sulfate + Barium Chloride → $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \underline{2}\text{NaCl} + \text{BaSO}_4$	Double- Replacement
16. Ammonium Phosphate + Lithium Hydroxide → $(\text{NH}_4)_3\text{PO}_4 + \underline{3}\text{LiOH} \rightarrow \underline{3}\text{NH}_4\text{OH} + \text{Li}_3\text{PO}_4$	Double- Replacement
17. Al + HCl → $\underline{2}\text{Al} + \underline{6}\text{HCl} \rightarrow \underline{2}\text{AlCl}_3 + \underline{3}\text{H}_2$	Single- Replacement
18. Calcium Hydroxide + Nitric Acid → $\text{Ca}(\text{OH})_2 + \underline{2}\text{HNO}_3 \rightarrow \text{Ca}(\text{NO}_3)_2 + \underline{2}\text{H}_2\text{O}$	Neutralization
19. Mercury (II) + Oxygen → $\underline{2}\text{Hg} + \text{O}_2 \rightarrow \underline{2}\text{HgO}$	Combination (Synthesis)
20. Silver Chloride → $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$	Decomposition