

Worksheet #4: Single-Replacement Reactions

- Step 1 - Write the formulas of the reactants on the left of the yield sign
Step 2 - Look at the Activity Series on page 333 to determine if the replacement can happen
Step 3 - If the replacement can occur, complete the reaction and balance it. If the reaction cannot happen, write N.R. (no rxn) on the product side.

1. lead + zinc acetate →
2. iron + aluminum oxide →
3. silver nitrate + nickel →
4. sodium bromide + iodine →
5. aluminum bromide + chlorine →
6. sodium iodide + bromine →
7. calcium + hydrochloric acid →
8. magnesium + nitric acid →
9. silver + sulfuric acid →
10. potassium + water →
11. sodium + water →

Worksheet #5: Double-Replacement Reactions

In these reactions, all you do is look at the names of the reactants, and "switch partners". Just be sure that the new pairs come out with the positive ion named first, and paired with a negative ion.

1. aluminum iodide + mercury(II) chloride →
2. silver nitrate + potassium phosphate →
3. copper(II) bromide + aluminum chloride →
4. calcium acetate + sodium carbonate →
5. ammonium chloride + mercury(I) acetate →
6. calcium nitrate + hydrochloric acid →
7. iron(II) sulfide + hydrochloric acid →
8. copper(II) hydroxide + acetic acid →
9. calcium hydroxide + phosphoric acid →
10. calcium bromide + potassium hydroxide →

Examine the products of the reactions on this page, and determine in each whether a gas, water, or a precipitate is formed. Use solubility Table B.9 on page R54 at the back of your textbook to determine the solubilities of the reaction products. If there is no gas, water, or precipitate produced, put an "X" through the yield sign, because no reaction occurs.

Worksheet #6: Combustion Reactions

We will focus on the combustion of hydrocarbons. Hydrocarbons react with oxygen to form carbon dioxide and water.

1. methane (CH_4) + oxygen \rightarrow
2. ethane (C_2H_6) + oxygen \rightarrow
3. propane (C_3H_8) + oxygen \rightarrow
4. butane (C_4H_{10}) + oxygen \rightarrow
5. pentane (C_5H_{12}) + oxygen \rightarrow
6. hexane (C_6H_{14}) + oxygen \rightarrow
7. ethene (C_2H_4) + oxygen \rightarrow
8. ethyne (C_2H_2) + oxygen \rightarrow
9. benzene (C_6H_6) + oxygen \rightarrow

Predicting the products of chemical reactions

Predict the products of the following reactions:

- 1) $\text{Ag} + \text{CuSO}_4 \rightarrow$
Type: _____
- 2) $\text{NaI} + \text{CaCl}_2 \rightarrow$
Type: _____
- 3) $\text{O}_2 + \text{H}_2 \rightarrow$
Type: _____
- 4) $\text{HNO}_3 + \text{Mn}(\text{OH})_2 \rightarrow$
Type: _____
- 5) $\text{AgNO}_2 + \text{BaSO}_4 \rightarrow$
Type: _____
- 6) $\text{HCN} + \text{CuSO}_4 \rightarrow$
Type: _____
- 7) $\text{H}_2\text{O} + \text{AgI} \rightarrow$
Type: _____
- 8) $\text{HNO}_3 + \text{Fe}(\text{OH})_3 \rightarrow$
Type: _____
- 9) $\text{LiBr} + \text{Co}(\text{SO}_3)_2 \rightarrow$
Type: _____
- 10) $\text{LiNO}_3 + \text{Ag} \rightarrow$
Type: _____
- 13) $\text{AlCl}_3 + \text{Cs} \rightarrow$
Type: _____
- 14) $\text{Al}(\text{NO}_3)_3 + \text{Ga} \rightarrow$
Type: _____
- 15) $\text{H}_2\text{SO}_4 + \text{NH}_4\text{OH} \rightarrow$
Type: _____
- 16) $\text{CH}_3\text{COOH} + \text{O}_2 \rightarrow$
Type: _____
- 17) $\text{C}_4\text{H}_6 + \text{O}_2 \rightarrow$
Type: _____
- 18) $\text{KCl} + \text{Mg}(\text{OH})_2 \rightarrow$
Type: _____
- 19) $\text{Zn} + \text{Au}(\text{NO}_3)_2 \rightarrow$
Type: _____
- 20) $\text{KOH} + \text{H}_2\text{SO}_4 \rightarrow$
Type: _____
- 21) $\text{BaS} + \text{PtCl}_2 \rightarrow$
Type: _____