

Describe a chemical equation (SEE THE NEXT PAGE) and how a balanced equation is written.

TYPES OF REACTIONS

Name:	Examples:
Decomposition reaction	$2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
	$2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2$

Combination or synthesis reaction	$2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
	$2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$

Single replacement reaction	$\text{Zn} + \text{HCl} \rightarrow \text{H}_2 + \text{ZnCl}_2$
	$\text{Mg} + \text{H}_2\text{O} \rightarrow \text{H}_2 + \text{MgO}$

Double replacement reaction	$\text{NaCl} + \text{AgNO}_3 \rightarrow \text{NaNO}_3 + \text{AgCl}\downarrow$
	$\text{Mg}(\text{OH})_2 + 2\text{HBr} \rightarrow 2\text{H}_2\text{O} + \text{MgBr}_2$

Combustion reaction	$\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$
	$2\text{C}_3\text{H}_6 + 9\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$
	$\text{C}_4\text{H}_{10}\text{O} + 6\text{O}_2 \rightarrow 4\text{CO}_2 + 5\text{H}_2\text{O}$

1. Describe each of these name reactions in terms of the reactants and products. Notice how many reactants and products there are. Notice what kind of reactant/product (element or compound) is shown in each equation.

Name:	Description of reactions
Decomposition reaction	<p><u>One reactant</u> decomposes into two or more products.</p>
Combination or synthesis reaction	<p>Two reactants combine to form <u>a single product</u>.</p>
Single replacement reaction	<p>Reactants are <u>an element</u> and <u>a compound</u>. Products are an <u>element and compound</u>.</p> <p>The <u>reactant element</u> replaces a similar element in the compound and the replaced element becomes the product element.</p>
Double replacement reaction	<p>Two reactant compounds and two product compounds. One of the product compounds has to be a covalent compound, a gas, liquid or solid (a precipitate).</p>
Combustion reaction	<p>A reactant (a carbon compound made of C, H and sometimes O) combines with <u>oxygen</u> to give <u>CO₂ and H₂O</u> as the <u>only products</u>.</p>