

Chemical Equations and Chemical Reactions

Lavoisier's law of Conservation of Mass

- During a chemical reaction, the total mass of the reacting substances, the reactants, is always equal to the total mass of the resulting substances, the products.

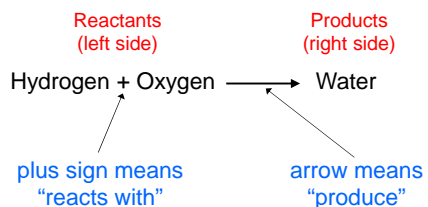
Dalton's Atomic Theory

- All matter is made up of small particles called atoms.
- *Atoms cannot be created, destroyed, or divided into smaller particles.*
- *All atoms of the same element are identical in mass and size, but they are different from the atoms of other elements.*
- Compounds are formed when atoms of different elements combine in fixed proportions.

Writing Chemical Equations

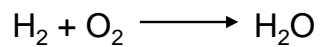
Word Equation

- The equation is written in words:



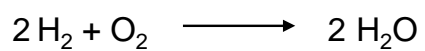
Skeleton Equation

- Summarizes chemical equation in symbolic form.



Balanced Equation

- Coefficients are added to ensure that the same number of atoms are on both sides of the equation.



States of Reactants and Products

- Sometimes you need to know the state of the reactants or products:

Solid	(s)	Fe(s) NaCl(s)
Liquid	(l)	H ₂ O(l)
Gas	(g)	He(g) N ₂ (g)
Aqueous Solution	(aq)	Salt solution: NaCl(aq)

