

Chemical Properties, Reactions, and Chemical Equations Notes

Physical Properties

- _____ - Electrical conductivity
- _____ - Specific Heat
- _____ - Density
- State (_____ , _____ , _____)

Physical Change

- Changes in Physical Property
 - Does not change the identity of the substance
 - o _____
 - o _____
 - o _____
- Example: Ice, rain, and steam are all water.

Chemical Change

- Form new substances
 - o Fe and O₂ form _____ (Fe₂O₃)
 - o Ag and S form _____ (Ag₂S)

Chemical Reaction

- A process in which _____ new substance is produced as a result of chemical change.

What is a Chemical Equation

-A way of putting _____ on paper.

Writing a Chemical Equation

Chemical symbols give a “before-and-after” picture of a chemical reaction

- What is a reactant? _____
- Where is a reactant located in an equation? _____
- What is a yield sign? _____
- Where is the yield sign located? _____
- What is a product? _____
- Where is the product located? _____

Reading a Chemical Reaction



Four molecules of NH₃ _____ five molecules
O₂ _____ four molecules NO and six molecules of
H₂O.

Law of Conservation of Mass

States that matter is neither created or destroyed.

This implies that we cannot lose or gain atoms at any point during the reaction.

That is, the number of atoms on both sides of the reaction have to be equal.

This law is the rationale for balancing chemical reactions.

Counting Atoms

Where is the Subscript located? _____

Where is the Coefficient located? _____

The _____ times the _____ gives the total number.

A Balanced Chemical Equation

Same numbers of _____ on each side of the equation.

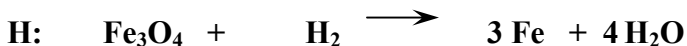
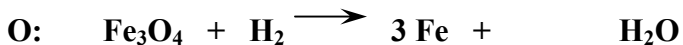
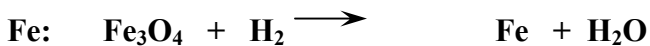
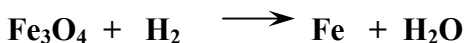
An unbalance equation has _____ numbers.

Balance Equations with Coefficients

Coefficients _____ of formulas balance each type of atom.

An equation is balanced by changing the coefficient in a somewhat trial and error fashion.

Steps in Balancing an Equation



Two things you **CANNOT** do when balancing an equations.

You cannot change a _____

You cannot place _____ of a formula..