Honors Chemistry CH 2 Notes CHS/Dooner

Properties of Matter:

Extensive Property:

Depends on the amount of matter in a sample i.e. mass, volume, etc

Intensive Property:

Depends on the type of matter in a sample, not the amount of matter i.e. hardness

Substance:

Matter that has a uniform and definite composition

Physical Property:

- A quality or condition of a substance that can be observed or measured without changing the substance's composition
- i.e. state, color, melting point, boiling point

States of Matter:

SOLID, LIQUID, GAS

Vapor: Defined as the gaseous state of a substance that is generally a liquid or solid at room temperature; i.e. water vapor

PHYSICAL CHANGE:

-some properties of a material change , but the composition of the material does not change -physical changes can be classified as REVERSIBLE(such as melting) or IRREVERSIBLE(such as chopping down a tree)

MIXTURES:

- a physical blend of 2 or more components
- either heterogeneous or homogeneous mixtures

HOMOGENEOUS MIXTURE:

- A mixture in which the composition is uniform throughout
- Also called a SOLUTION
- i.e. saltwater
- most are liquid but could be gas(like air) or solid(like stainless steel)

HETEROGENEOUS MIXTURE:

- a mixture in which the composition is NOT uniform throughout
- · i.e. chicken soup

ELEMENTS AND COMPOUNDS:

ELEMENT: the simplest form of matter that has a unique set of properties; i.e. Carbon

<u>COMPOUND</u>: a substance that contains 2 or more elements chemically combined in a FIXED PROPORTION

**** <u>Compounds can be broken down into simpler substances by</u> <u>chemical means, but elements CANNOT</u>

CHEMICAL CHANGE:

- a change that produces matter with a different composition than the original matter

PROPERTIES OF COMPOUNDS:

- in general, the properties of compounds are different from those of their component elements;
 i.e. sodium chloride(a compound known as table salt) is composed of sodium(an element which is a shiny soft explosive metal) and chlorine(an element which is a greenish poisonous gas)
- if the composition of a material is fixed, the material is a substance
- if the composition of a material may vary, the material is a mixture

CHEMICAL PROPERTY:

- the ability of a substance to undergo a specific chemical change

***** DURING A CHEMICAL CHANGE THE COMPOSITION OF MATTER ALWAYS CHANGES

CHEMICAL REACTION: one or more substances change into one or more new substances

REACTANTS: substances at start of reaction **PRODUCTS:** substances at the end of the reaction

SIGNS OF A CHEMICAL CHANGE:

- 1) TRANSFER OF ENERGY
- 2) COLOR CHANGE

- 3) PRODUCTION OF A GAS
- 4) FORMATION OF A PRECIPITATE

PRECIPITATE: a solid that forms and settles out of a liquid mixture

CONSERVATION OF MASS:

*****DURING ANY CHEMICAL REACTION, THE MASS OF THE PRODUCTS ALWAYS EQUALS THE MASS OF THE REACTANTS

THE LAW OF CONSERVATION OF MASS:

-STATES THAT IN ANY PHYSICAL CHANGE OR CHEMICAL REACTION, MASS IS CONSERVED

- MASS IS NEITHER CREATED NOR DESTROYED!!!!!