Simi Valley High School
General Chemistry Semester One Review Sheet #1

The SI base unit for **mass** is the kilogram.

The mass of a particular sample of a given substance stays the same anywhere in the universe.

The SI base unit for **volume** is the Liter

One milliliter has the same volume as a cubic centimeter

The **law of conservation of matter** says that matter can neither be created nor destroyed, but can be converted from one form to another.

Elements cannot be broken down into other substances by ordinary chemical means.

Compounds are formed when elements are joined together by chemical bonds

Mixtures consist of substances (either elements or compounds) found together, but not chemically joined.

Solids have a definite shape and volume

Liquids have a definite volume but NOT a definite shape

Gases have NEITHER a definite shape or volume

Chemical changes mean one chemical changes into something entirely different. Examples of chemical changes include things like rusting, burning, souring, decaying, etc.

Physical changes are changes in things like shape, temperature, density, evaporation, melting, etc. The substance does NOT change into something different.

Changes of the state of matter include melting, evaporating, condensing, solidifying

The symbols of the chemical elements consist of a single capital letter (i.e. H = hydrogen) or a capital letter then a lower case letter (i.e. Fe = iron)

Energy is defined as the capacity to do work.

Temperature is defined as the average kinetic energy of the molecules of a substance

One **calorie** is the amount of heat needed to raise the temperature of one gram of water one Celsius degree.

Absolute zero is the point at which all motion of particles ceases.

The **joule** is the SI unit of energy or heat

Density is defined as the mass of an object divided by its volume.

Sample problems involving measuring and finding density are listed below.

A. A liquid is to be weighed on a balance using a beaker to hold the liquid. The beaker is weighed and found to have a mass of 45.8. If the mass of liquid needed is 101.9g, at what mass should the weights on the balance be set?

B. A graduated cylinder contains 6.3 mL of water. An object is dropped into the graduated cylinder which then reads 9.7mL. What is the volume of the object?

C. A sample of material has a mass of 38.6 grams and a volume of 10.0 cubic centimeters. What is its density?