**Properties of Matter**

Any substance can be identified by its property and composition. There are four properties of matter that are physical properties, chemical properties, extensive properties, and intensive properties.

A **physical property** is associated with a physical change that can be observed and measured. When there is a **physical change**, the composition or the internal structure does not change. For example, chopping the vegetable into pieces or melting the ice into water or painting a piece of wood. Even though, the appearance changes, the composition does not change, that means, we did not destroy or change the molecules inside. They still remained intact.

A **chemical property** is an observable property that often used to identify the chemical change. When there is a **chemical change,** the internal structure does not remain the same and besides something new is formed. For example, burning of a gasoline in your car engine or digesting the food in your body.

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**Example**

Classify each of the following as physical or chemical change.

(a) Dissolving the sugar in water
(b) Burning of alcohol
(c) Rusting of iron nail
(d) Freezing of water
(e) Tarnishing of silverwares in your homes.

**Answer**

(a) physical, (b) chemical, (c) chemical, (d) physical, (e) chemical.

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Most of the time, we measure the properties of matter. As such, all measurable properties fall into groups: intensive property and extensive property. **Intensive property** is the *property that does not depend on the amount of matter*. Examples include temperature, density, specific gravity, pressure, melting point, and boiling point. **Extensive property** is the *property that depends on the amount of matter*. Examples include length, volume, and mass.

**Example**
Classify each of the following as intensive or extensive property.

(a) Potential energy
(b) Viscosity
(c) Color
(d) Energy
(e) Heat

**Answer**

(a) intensive, (b) intensive, (c) intensive, (d) intensive, (e) intensive