PHYSICAL CHANGE vs. CHEMICAL CHANGE

The difference between a physical reaction and a chemical reaction is composition. In a chemical reaction, there is a change in the composition of the substances in question; in a physical change there is a difference in the appearance, smell, or simple display of a sample of matter without a change in composition. Although we call them physical "reactions," no reaction is actually occurring. In order for a reaction to take place, there must be a change in the elemental composition of the substance in question. Thus, we shall simply refer to physical "reactions" as physical changes from now on.

Introduction
Physical changes are limited to changes that result in a difference in display without changing the composition. Some common changes (but not limited to) are:

Texture
Color
Temperature
Shape
Change of State (Boiling Point and Melting Point are significant factors in determining this change.)
Physical properties include many other aspects of a substance. The following are (but not limited to) physical properties.

Luster
Malleability
Ability to be drawn into a thin wire
Density
Viscosity
Solubility
Mass
Volume
Any change in these physical properties is referred to as a physical change. For further information, please refer to Properties of Matter.

Chemical changes, on the other hand, are quite different. A chemical change occurs when the substance's composition is changed. When bonds are broken and new ones are formed a chemical change occurs. The following are indicators of chemical changes:

Change in Temperature
Change in Color
Noticeable Odor (after reaction has begun)
Formation of a Precipitate
Formation of Bubbles

Note: When two or more reactants are mixed and a change in temperature, color, etc. is noticed, a chemical reaction is probably occurring. These are not definite indicators; a chemical reaction may not be occurring. A change in color is not always a chemical change. If one were to change the color of a substance in a non-chemical reaction scenario, such as painting a car, the change is physical and not chemical. This is because the composition of the car has not changed. Proceed with caution.