

# Physical & Chemical Properties

Name: \_\_\_\_\_

Part 1: As we go through the notes, list at least four physical and four chemical properties and give specific examples of each property.

<i>Physical Properties</i>	<i>Specific Example</i>
<i>Chemical Properties</i>	<i>Specific Example</i>

**Physical properties are properties that can be determined without altering the chemical makeup of a substance. Chemical properties relate to the types of chemical changes that a substance undergoes (or doesn't undergo).**

Part 2: Using the space provided, classify each of the following statements as describing either a physical property or a chemical property.

	1) Gallium, used primarily in semiconductors and light emitting diodes (LEDs), is a soft, silver-colored metal.
	2) Helium is used to fill blimps because its density is lower than that of air, thus enabling these crafts to float.
	3) Zinc metal burns in air to form zinc oxide.
	4) Sodium metal must be stored under kerosene or nitrogen because of its high reactivity with oxygen and water.
	5) Bromine is a reddish-brown element and is the only nonmetallic element that exists in the liquid state at room temperature.

	6) Isopropyl alcohol (also known as rubbing alcohol) readily evaporates when it is placed on your skin.
	7) Carbon dioxide and water are produced when gasoline undergoes combustion in a car engine.
	8) More energy is required to raise the temperature of 1 g of water than is needed to raise the temperature of 1 g of any metal.
	9) The compound boron nitride is almost as hard as a diamond and is used for glass and diamond shaping and cutting.
	10) Hydrogen sulfide is removed from the natural gas used to heat homes through a reaction with oxygen.

**Physical changes are changes that do not change the identity of the substance. Chemical changes are changes in the substance in a new substance with different properties.**

Part 3: The following observations are made during a lab experience. Identify each observation as a probable chemical or physical change.

	1) When electricity is run through a colorless liquid, two gases are produced, a green one and a yellow one.
	2) A small flame is placed up against the edge of a test tube with a gas inside it. The flame gets bigger as the gas escapes.
	3) When a blue solid is placed in water and stirred, the solid disappears and the water turns blue.
	4) A piece of iron that is set outside turns from shiny gray to dull red in color over time.
	5) A piece of gray solid metal is placed on a hot plate and the gray solid turns into a gray liquid.
	6) A banana on the counter goes from green to yellow to brown over a period of a few days.
	7) As a cake is baked, it turns from a liquid to a solid and expands in size.
	8) A balloon filled with a gas is stuck with a pin and the balloon breaks and the gas escapes.
	9) A penny is cut in half to expose a gray metal on the inside surrounded by a small pink shell.
	10) A candle burns with a flame and gradually gets smaller.