

Name _____

Physical vs. Chemical Properties

A physical property is observed with the senses and can be determined without destroying the object. For example, color, shape, mass, length, and odor are all examples of physical properties.

A chemical property indicates how a substance reacts with something else. The original substance is fundamentally changed in observing a chemical property. For example, the ability of iron to rust is a chemical property. The iron has reacted with oxygen, and the original iron metal is changed. It now exists as iron oxide, a different substance.

Classify the following properties as either chemical or physical by putting a check in the appropriate column.

	physical property	chemical property
1. blue color		
2. density		
3. flammability		
4. solubility		
5. reacts with acid to form H_2		
6. supports combustion		
7. sour taste		
8. melting point		
9. reacts with a base to form a gas		
10. reacts with a base to form water		
11. hardness		
12. boiling point		
13. can neutralize a base		
14. luster		
15. odor		

Physical vs. Chemical Changes

In a physical change, the original substance still exists; it has only changed in form. In a chemical change, a new substance is produced. Energy changes always accompany chemical changes.

Classify the following as being a physical or chemical change.

1. Sodium hydroxide dissolves in water. _____
2. Hydrochloric acid reacts with potassium hydroxide to produce a salt, water, and heat.

3. A pellet of sodium is sliced in two. _____
4. Water is heated and changed to steam. _____
5. Potassium chlorate decomposes to potassium chloride and oxygen gas.

6. Iron rusts. _____
7. When placed in H_2O , a sodium pellet catches on fire as hydrogen gas is liberated and sodium hydroxide forms. _____
8. Evaporation. _____
9. Ice melting. _____
10. Milk sours. _____
11. Sugar dissolves in water. _____
12. Wood rotting. _____
13. Pancakes cooking on a griddle. _____
14. Grass growing in a lawn. _____
15. A tire is inflated with air. _____
16. Food is digested in the stomach. _____
17. A paper towel absorbs water. _____