

Practice – Properties of Matter

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.

Property	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 water 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	✓	

Practice – Changes of Matter

In a physical change the original substance still exists. It has only changed 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.

Change	Physical Change	Chemical Change
Sodium hydroxide dissolves in water.	✓	
Hydrochloric acid reacts with potassium hydroxide to produce a salt, water and heat.		✓
A pellet of sodium is sliced in two.	✓	
Water is heated and changed to steam.	✓	
Potassium chlorate decomposes to potassium chloride and oxygen gas.		✓
Iron rusts.		✓
When placed in water (H ₂ O), a sodium pellet catches on fire as hydrogen gas is liberated and sodium hydroxide forms.		✓
Evaporation.	✓	
Ice melting.	✓	
Milk sours.		✓
Sugar dissolves in water.	✓	
Wood rotting.		✓
Pancakes cooking on a griddle.		✓
Grass growing in a lawn.		✓
A tire is inflated with air.	✓	
Food is digested in the stomach.		✓
Water is absorbed by a paper towel.	✓	