

Physical vs. Chemical Properties

Name _____ Per _____

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.

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

	Physical Property	Chemical Property
1. Blue color (<i>or any color</i>)		
2. Density		
3. Flammability		
4. Solubility (<i>will it dissolve in something</i>)		
5. Reacts with acid to form H ₂ gas		
6. Supports combustion (<i>AKA: Can burn</i>)		
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 (<i>how shiny something is</i>)		
15. Odor		
16. Bitter Taste		
17. Malleable (<i>Can be stretched into wires</i>)		
18. Can burn		
19. Can Oxidize (<i>chemically combines w/ O</i>)		
20. State of matter (<i>solid, liquid, or gas</i>)		
21. Attraction/Repulsion to magnets		
22. pH		

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. Any energy change always accompanies a chemical change.

Directions: Classify the following as being a physical change (put PC) or chemical change (put CC).

1. Sodium hydroxide dissolves in water. _____
2. Cutting Wood with a chainsaw. _____
3. Hydrochloric acid reacts with potassium hydroxide to produce a salt, water, and heat. _____
4. A pellet of sodium is sliced in two. _____
5. Water is heated and changed to steam. _____
6. Potassium chlorate decomposes to potassium chloride and oxygen gas. _____
7. Iron rusts. _____
8. When placed in H_2O , a sodium (Na) pellet catches on fire as hydrogen gas (H_2) is released and NaOH forms. _____
9. Evaporation _____
10. Folding a piece of paper _____
11. Ice melting _____
12. Milk sours. _____
13. Sugar dissolves in water. _____
14. Wood rotting _____
15. Pancakes cooking on a griddle. _____
16. Grass growing in a lawn. (*Hint: think photosynthesis*) _____
17. A tire is inflated with air. _____
18. Tearing a piece of paper. _____
19. Food is digested in the stomach. _____
20. Water is absorbed by a paper towel. _____
21. Acid on limestone produces carbon dioxide gas. _____
22. Water freezes _____
23. Crushing a can _____
24. Melting a sugar cube _____
25. Burning a sugar cube _____
26. Mixing lemonade powder into water _____
27. Dissolving salt in water _____