

# Physical and Chemical Changes

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What are *physical changes*?

What are some of the key words that identify a change as *physical*?

What are *chemical changes*?

What is another term used to refer to chemical changes?

What are some of the key words that identify a change as *chemical*?

What are the indicators that provide evidence of a chemical change (total of six)?

Identify the following statements as physical (PC) or chemical (CC) properties.

1. A steak is cooked on a grill until well done.
2. In the lab, students firepolish the end of a glass rod. The jagged edge of the glass has become smooth.
3. When two clear and colorless aqueous salt solutions are mixed together, the solution turns cloudy and yellow.
4. A woman visits a hairdresser and has her hair colored a darker shade of brown. After several weeks, the hair, even though washed several times, has not changed back to its original color.
5. In the lab, a student cuts a 20-cm strip of magnesium metal into 1-cm pieces.
6. A few grams of sucrose are placed in a small beaker of deionized water; the sugar crystals “disappear,” and the liquid in the beaker remains clear and colorless.
7. A copper statue, over time, turns green.
8. When a few milligrams of baking soda (sodium bicarbonate) is placed into a few milliliters of vinegar (acetic acid), bubbles are produced.
9. When a few grams of a blue, crystalline solid are placed into a beaker of deionized water, the crystals “disappear,” and the liquid becomes clear and blue in color.
10. In the lab, a student mixes 2 mL of sodium hydroxide with 2 mL of hydrochloric acid in a test tube. He notices the test tube has become very warm to the touch.