



Physical vs. Chemical Change



PART I

Physical Change

1. What is the definition of a physical change?
A reversible change in the physical properties of a substance (e.g. size, shape, phase)
2. Name the physical change that occurs when a solid transitions into a liquid.
Fusion
3. Name the physical change that occurs when a liquid transitions into a gas.
Vaporization
4. Name the physical change that occurs when a solid transitions into a gas.
Sublimation
5. Name the physical change that occurs when a gas transitions into a liquid.
Condensation
6. Name the physical change that occurs when a liquid transitions into a solid.
Freezing
7. Name the physical change that occurs when a gas transitions into a solid.
Deposition
8. Does the chemical composition change during a physical change? Please be specific.
No. The intermolecular bonds are broken during the physical change, but the intramolecular bonds will remain intact.
9. Is a physical change reversible? Please be specific.
Yes. Ice can melt, and then we can freeze the water.
10. Provide three examples of a physical change.
Sugar dissolving into water, crushing a can, breaking a glass, mixing sand and water

PART II

Chemical Change

1. What is the definition of a chemical change?

An irreversible change involving the rearrangement of the atoms of one or more substances (e.g. cooking, fire, etc.)

2. Does the chemical composition change during a chemical change? Please be specific.
Yes, you cannot “unburn” a log of wood.

Fuel + Oxygen → Water + Carbon Dioxide

3. Is a chemical change reversible? Please be specific.

No, water and carbon dioxide are not starting materials for a combustion reaction.

4. Provide three examples of a chemical change.

Combustion, respiration, photosynthesis, oscillating clock reaction