

1.E: Chemistry, Matter, and Measurement (Exercises)

1. Does each statement refer to a chemical property or a physical property?
 - a. Balsa is a very light wood.
 - b. If held in a flame, magnesium metal burns in air.
 - c. Mercury has a density of 13.6 g/mL.
 - d. Human blood is red.
2. Does each statement refer to a chemical property or a physical property?
 - a. The elements sodium and chlorine can combine to make table salt.
 - b. The metal tungsten does not melt until its temperature exceeds 3,000°C.
 - c. The ingestion of ethyl alcohol can lead to disorientation and confusion.
 - d. The boiling point of isopropyl alcohol, which is used to sterilize cuts and scrapes, is lower than the boiling point of water.
3. Define *element*. How does it differ from a compound?
4. Define *compound*. How does it differ from an element?
5. Give two examples of a heterogeneous mixture.
6. Give two examples of a homogeneous mixture.
7. Identify each substance as an element, a compound, a heterogeneous mixture, or a solution.
 - a. xenon, a substance that cannot be broken down into chemically simpler components
 - b. blood, a substance composed of several types of cells suspended in a salty solution called plasma
 - c. water, a substance composed of hydrogen and oxygen
8. Identify each substance as an element, a compound, a heterogeneous mixture, or a solution.
 - a. sugar, a substance composed of carbon, hydrogen, and oxygen
 - b. hydrogen, the simplest chemical substance
 - c. dirt, a combination of rocks and decaying plant matter
9. Identify each substance as an element, a compound, a heterogeneous mixture, or a solution.
 - a. air, primarily a mixture of nitrogen and oxygen
 - b. ringer's lactate, a standard fluid used in medicine that contains salt, potassium, and lactate compounds all dissolved in sterile water
 - c. tartaric acid, a substance composed of carbon, hydrogen, and oxygen
10. Identify each material as an element, a compound, a heterogeneous mixture, or a solution.
 - a. equal portions of salt and sand placed in a beaker and shaken up
 - b. a combination of beeswax dissolved in liquid hexane
 - c. hydrogen peroxide, a substance composed of hydrogen and oxygen
11. What word describes each phase change?
 - a. solid to liquid
 - b. liquid to gas
 - c. solid to gas
12. What word describes each phase change?
 - a. liquid to solid
 - b. gas to liquid
 - c. gas to solid

Answers

1.
 - a. physical property

- b. chemical property
 - c. physical property
 - d. physical property
- 2.
- a. chemical property
 - b. physical property
 - c. chemical property
 - d. physical property
3. An element is a substance that cannot be broken down into chemically simpler components. Compounds can be broken down into simpler substances.
4. A compound is composed of two or more elements combined in a fixed ratio. An element is the simplest chemical substance.
5. a salt and pepper mix and a bowl of cereal (answers will vary)
6. vinegar and rubbing alcohol (answers will vary)
- 7.
- a. element
 - b. heterogeneous mixture
 - c. compound
- 8.
- a. compound
 - b. element
 - c. heterogeneous mixture
- 9.
- a. solution
 - b. solution
 - c. compound
- 10.
- a. heterogeneous mixture
 - b. solution
 - c. compound
- 11.
- a. melting or fusion
 - b. boiling or evaporation
 - c. sublimation
- 12.
- a. freezing
 - b. condensation
 - c. deposition

This page titled [1.E: Chemistry, Matter, and Measurement \(Exercises\)](#) is shared under a [CC BY-NC-SA 3.0](#) license and was authored, remixed, and/or curated by [Anonymous](#) via [source content](#) that was edited to the style and standards of the LibreTexts platform.