

## Pure Substances Quiz Answer Key PDF

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**What are the challenges in obtaining pure substances from natural sources?**

**Challenges include the presence of impurities, the need for complex separation techniques, and the potential for contamination during extraction and processing.**

**Which of the following are compounds?**

- A. Water ✓**
- B. Hydrogen
- C. Carbon dioxide ✓**
- D. Nitrogen

**What are the characteristics of pure substances?**

- A. Variable composition
- B. Fixed composition ✓**
- C. Consistent properties ✓**
- D. Can be separated by physical means

**What property is used in distillation to separate substances?**

- A. Density
- B. Melting point
- C. Boiling point ✓**
- D. Color

**Which of the following is NOT a pure substance?**

- A. Water ✓**
- B. Oxygen ✓**

C. Brass

**D. Carbon dioxide ✓**

**Which element is a pure substance?**

A. Water

B. Salt

**C. Iron ✓**

D. Sugar

**Explain why water is considered a pure substance.**

**Water is considered a pure substance because it has a consistent chemical composition (H<sub>2</sub>O) and uniform properties throughout.**

**Describe the difference between an element and a compound.**

**An element is a pure substance made of only one type of atom, while a compound is a pure substance composed of two or more elements chemically combined in a fixed ratio.**

**How can chromatography be used to separate substances in a mixture?**

**Chromatography separates substances based on their different affinities to a stationary phase and a mobile phase, allowing components to be isolated as they move at different rates.**

**Why is it important to use pure substances in pharmaceuticals?**

**Pure substances are crucial in pharmaceuticals to ensure the safety, efficacy, and predictability of drug formulations, avoiding harmful impurities.**

**Discuss how the physical properties of a pure substance can be used to identify it.**

**Physical properties such as melting point, boiling point, and density are unique to each pure substance and can be used to identify and verify its purity.**

**Which of the following are elements?**

- A. Sodium ✓**
- B. Methane
- C. Chlorine ✓**
- D. Ammonia

**What is the state of matter of pure oxygen at room temperature?**

- A. Solid
- B. Liquid
- C. Gas ✓**
- D. Plasma

**Which of the following are examples of pure substances?**

- A. Helium ✓**
- B. Steel
- C. Ethanol ✓**
- D. Granite

**Which of the following is an example of a pure substance?**

- A. Air
- B. Saltwater
- C. Gold ✓**
- D. Salad

**Which properties are considered physical properties?**

- A. Flammability
- B. Boiling point ✓**
- C. Color ✓**
- D. Reactivity with water

**What is the primary characteristic of a compound?**

- A. It consists of only one type of atom
- B. It can be separated by physical means
- C. It has a fixed ratio of elements ✓**
- D. It is always a gas

**What is a pure substance?**

- A. A mixture of two or more elements
- B. A material with a constant composition ✓**
- C. A substance that can be separated by physical means
- D. A solution of various compounds

**Which methods can be used to separate mixtures into pure substances?**

- A. Filtration ✓**
- B. Distillation ✓**
- C. Chromatography ✓**
- D. Evaporation ✓**

**Which of the following is a chemical property?**

- A. Melting point
- B. Density
- C. Reactivity with acids ✓**
- D. Color