

## Decomposition Reactions Quiz Answer Key PDF

### Decomposition Reactions Quiz Answer Key PDF

*Disclaimer: The decomposition reactions quiz answer key pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at [max@studyblaze.io](mailto:max@studyblaze.io).*

#### In the electrolysis of water, what gases are produced?

- A. Oxygen and nitrogen
- B. Hydrogen and oxygen ✓**
- C. Hydrogen and nitrogen
- D. Carbon dioxide and oxygen

#### What are the characteristics of electrolytic decomposition reactions? (Select all that apply)

- A. Require heat
- B. Involve electricity ✓**
- C. Produce gases ✓**
- D. Occur in the presence of light

#### How does the presence of a catalyst affect the rate of a decomposition reaction?

**The presence of a catalyst speeds up the rate of a decomposition reaction.**

#### Predict the products of the decomposition of potassium chlorate and explain the reaction process.

**The products of the decomposition of potassium chlorate are potassium chloride (KCl) and oxygen gas (O<sub>2</sub>).**

#### Which of the following are examples of decomposition reactions? (Select all that apply)

- A. Decomposition of hydrogen peroxide ✓**
- B. CombustION of methane
- C. Electrolysis of water ✓**

D. Synthesis of ammonia

**What factors can affect the rate of decomposition reactions? (Select all that apply)**

- A. Temperature ✓
- B. Pressure
- C. Concentration of reactants ✓
- D. Presence of a catalyst ✓

**What is a decomposition reaction?**

- A. A reaction where two elements combine to form a compound.
- B. A reaction where a compound breaks down into simpler substances. ✓
- C. A reaction where an element replaces another in a compound.
- D. A reaction where two compounds exchange ions.

**Discuss the role of decomposition reactions in the carbon cycle.**

Decomposition reactions are essential in the carbon cycle as they convert dead organic material into simpler compounds, releasing carbon dioxide into the atmosphere and returning nutrients to the soil.

**Explain the process of thermal decomposition and provide an example.**

Thermal decomposition is the process in which a single compound breaks down into two or more simpler substances when subjected to heat. For example, when calcium carbonate ( $\text{CaCO}_3$ ) is heated, it decomposes into calcium oxide ( $\text{CaO}$ ) and carbon dioxide ( $\text{CO}_2$ ).

**What are the environmental implications of decomposition reactions in waste management?**

The environmental implications of decomposition reactions in waste management include the potential release of harmful gases like methane and carbon dioxide, as well as leachate that can contaminate groundwater, while also providing benefits such as nutrient recycling and energy recovery.

**Describe how electrolytic decomposition is used in industrial applications.**

In industrial applications, electrolytic decomposition is utilized to separate elements from their compounds, such as in the electrolysis of water to produce hydrogen and oxygen, and in the extraction of metals from ores, where it helps purify metals like aluminum and copper.

Which of the following are products of the decomposition of ammonium dichromate? (Select all that apply)

- A. Chromium(III) oxide ✓
- B. Nitrogen gas ✓
- C. Water ✓
- D. Ammonia

Which reactions are considered photolytic decomposition? (Select all that apply)

- A. Decomposition of silver bromide in sunlight ✓
- B. Electrolysis of sodium chloride
- C. Decomposition of hydrogen peroxide
- D. Decomposition of ozone by UV light ✓

What type of energy is involved in thermal decomposition reactions?

- A. Light
- B. Heat ✓
- C. Electricity
- D. Sound

Which of the following is not a type of decomposition reaction?

- A. Thermal
- B. Electrolytic
- C. Photolytic
- D. Catalytic ✓

What is the product of the decomposition of calcium carbonate?

- A. Calcium and oxygen
- B. Calcium oxide and carbon dioxide ✓
- C. Calcium chloride and water

D. Calcium hydroxide and carbon monoxide

**Which of the following compounds can undergo thermal decomposition? (Select all that apply)**

**A. Calcium carbonate ✓**

B. Sodium chloride

**C. Potassium chlorate ✓**

**D. Ammonium nitrate ✓**

**Which of the following reactions involves the use of electricity?**

A. Thermal decomposition

**B. Electrolytic decomposition ✓**

C. Photolytic decomposition

D. Catalytic decomposition

**Which of the following is an example of a photolytic decomposition reaction?**

A. Electrolysis of water

B. Decomposition of calcium carbonate

**C. Decomposition of silver chloride in sunlight ✓**

D. Decomposition of hydrogen peroxide

**Which of the following is a general equation for a decomposition reaction?**

A.  $A + B \rightarrow AB$

B.  $AB + C \rightarrow AC + B$

**C.  $AB \rightarrow A + B$  ✓**

D.  $A + B \rightarrow C$