Strong Acids Quiz Answer Key PDF

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Which of the following is a strong acid?

A. Acetic Acid
B. Hydrochloric Acid ✓
C. Citric Acid
D. Carbonic Acid

Which of the following are strong acids? (Select all that apply)

A. Hydrochloric Acid ✓
B. Sulfuric Acid ✓
C. Acetic Acid
D. Nitric Acid ✓

Which of the following is a property of strong acids?

A. They have a slippery feel.
B. They are poor conductors of electricity.
C. They are highly corrosives. ✓
D. They taste sweet.

Which acids are commonly used in laboratory settings as strong acids? (Select all that apply)

A. Hydrochloric Acid ✓
B. Acetic Acid
C. Sulfuric Acid ✓
D. Citric Acid

Which of the following reactions involve strong acids? (Select all that apply)

A. Neutralization with a base ✓

B. Reaction with metals to produce hydrogen gas ✓

C. Combustions in air

D. Precipitation reactions

Which strong acid is commonly used in car batteries?

A. Nitric Acid

B. Hydrochloric Acid

C. Sulfuric Acid ✓

D. Perchloric Acid

What is the primary characteristic of a strong acid?

A. It partially dissociates in water.

B. It has a sweet taste.

C. It completely dissociates in water. ✓

D. It has a high boiling point.

Which of the following are properties of strong acids? (Select all that apply)

A. High pH

B. High conductivity ✓

C. Complete ionization in water ✓

D. Low reactivity

Explain why strong acids are considered good conductors of electricity.

Strong acids are good conductors of electricity because they completely dissociate into ions in water, allowing for efficient charge transfer.

Describe the process of neutralizing a strong acid before disposal.

Neutralizing a strong acid involves adding a base, such as sodium hydroxide, gradually until the pH reaches a neutral level, typically around 7, ensuring safe disposal.

What are the potential environmental impacts of improperly disposing of strong acids?

Improper disposal can lead to soil and water contamination, harm aquatic life, and disrupt ecosystems due to the corrosiveness and toxic nature of strong acids.

Which strong acids are used in the production of explosives? (Select all that apply)

A. Hydrochloric Acid

B. Nitric Acid ✓

C. Sulfuric Acid

D. Perchloric Acid ✓

Discuss the role of strong acids in industrial applications. Provide at least two examples.

Strong acids are used in industries for metal cleaning (hydrochloric acid) and fertilizer production (sulfuric acid). They help in removing rust and producing essential nutrients for agriculture.

How does the complete dissociation of strong acids in water affect their pH?

Complete dissociation results in a high concentration of hydrogen ions, leading to a very low pH, typically between 0 and 3, indicating strong acidity.

Why is it important to use personal protective equipment (PPE) when handling strong acids?

PPE is crucial to prevent chemical burns, inhalation of fumes, and other injuries due to the corrosiveness and hazardous nature of strong acids.

What safety precautions should be taken when handling strong acids? (Select all that apply)

A. Wear gloves ✓

B. Use a fume hood ✓

C. Dilute with water before disposal ✓

D. Store in metal containers

Which strong acid is used in the production of fertilizers?

A. Hydrochloric Acid
B. Nitric Acid ✓
C. Acetic Acid
D. Phosphoric Acid

Which of the following acids is not considered a strong acid?

A. Hydroiodic Acid
B. Sulfuric Acid
C. Hydrofluoric Acid ✓
D. Nitric Acid

What is the chemical formula for Perchloric Acid?

A. $HClO_3$
B. $HClO_4$ ✓
C. H_2SO_4
D. HNO_3

What is the pH range typically associated with strong acids?

A. 0-3 ✓
B. 4-7
C. 7-10
D. 10-14