

What are Acids and Bases?

Worksheet

An acid is a substance that donates H ions (or protons) in solution, while a base accepts H ions or releases OH ions; their strength is measured on the pH scale from 0 to 14.

Questions

1. Which pH value indicates a strong acid?

- A) 1
- B) 7
- C) 9
- D) 13

2. What ion do bases release in water?

- A) H
- B) OH
- C) Na
- D) Cl

3. What are the products of an acid-base neutralization reaction?

- A) Gas and metal
- B) Salt and water
- C) Only water
- D) Only salt

4. Which of these is a common household base?

- A) Vinegar
- B) Lemon juice
- C) Baking soda
- D) Battery acid

5. Classify HCl (hydrochloric acid) and NaOH (sodium hydroxide) as acids or bases and explain why.

6. Write the neutralization reaction between hydrochloric acid (HCl) and sodium hydroxide (NaOH).

7. Lemon juice has a pH of about 2, and baking soda solution has a pH of about 9. Identify which is the stronger acid and which is basic.

8. Define: What is an acid?

9. Define: What is a base?

10. Define: What is the Brnsted-Lowry definition of an acid?

Answer Key

1. A) 1 - The lower the pH below 7, the stronger the acid; pH 1 is strongly acidic.
2. B) OH⁻ - Bases release hydroxide ions (OH⁻) in aqueous solution.
3. B) Salt and water - Acid + Base Salt + Water is the general neutralization reaction.
4. C) Baking soda - Baking soda (sodium bicarbonate) is a mild base, unlike the other acidic options.
5. HCl H⁺ + Cl⁻ in water, releasing H⁺ ions it is an acid. NaOH Na⁺ + OH⁻ in water, releasing OH⁻ ions it is a base.
6. Acid + Base Salt + Water HCl + NaOH NaCl + H₂O The H from the acid combines with OH from the base to form water.
7. pH 2 is far below 7 lemon juice is a strong acid. pH 9 is above 7 baking soda solution is basic (a weak base).
8. A substance that donates H⁺ ions in water and has a pH below 7.
9. A substance that accepts H⁺ ions or releases OH⁻ ions, with a pH above 7.
10. A proton (H⁺) donor; a base is a proton acceptor.

Bounlu

All cards, step-by-step solutions and an AI tutor are in the Notek app.
Promy turns exam dates into automatic reminders.