

# UPGRADE to the Bundle

## Crash Course - CHEMISTRY

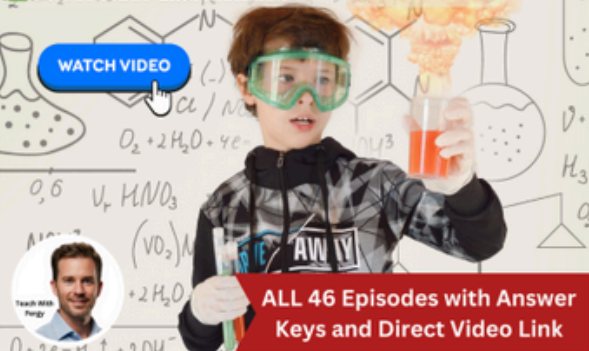
### 46 Episode Series Bundle

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#### Crash Course Chemistry #30: pH and pOH

Name: \_\_\_\_\_ Date: \_\_\_\_\_

You can access the video here → <https://youtu.be/L567yS1005Y?si=sE1JFZaiWajCzow>

1. The term "pH" stands for the \_\_\_\_\_ of hydrogen in a solution.
2. The pH scale is mathematically defined as the negative base 10 \_\_\_\_\_ of the hydrogen ion concentration.
3. Hydrogen ions are also commonly referred to as \_\_\_\_\_.
4. When water dissociates, it forms hydronium ( $\text{H}_3\text{O}^+$ ) and \_\_\_\_\_ ( $\text{OH}^-$ ) ions.
5. The chemical equation describing water dissociation has an associated constant known as the \_\_\_\_\_.
6. The value of the water dissociation constant ( $K_w$ ) is \_\_\_\_\_ at 25°C.
7. The pH of pure water is \_\_\_\_\_.
8. Substances with a pH below 7 are considered \_\_\_\_\_.
9. A \_\_\_\_\_ acid dissociates completely in water, releasing a large number of hydrogen ions.
10. The logarithm of 100 to the base 10 is \_\_\_\_\_.
11. The concentration of hydronium ions in neutral water is \_\_\_\_\_ moles per liter.
12. The \_\_\_\_\_ is calculated as the negative log of the hydroxide ion concentration.
13. The sum of the pH and the pOH in any aqueous solution at 25°C is always \_\_\_\_\_.
14. Weak bases, like baking soda, have a pH in the range of \_\_\_\_\_.
15. \_\_\_\_\_ is a pH indicator that changes color based on acidity or basicity.

#### Crash Course Chemistry #30: pH and pOH KEY

1. The term "pH" stands for the **power** of hydrogen in a solution.
2. The pH scale is mathematically defined as the negative base 10 **logarithm** of the hydrogen ion concentration.
3. Hydrogen ions are also commonly referred to as **protons**.
4. When water dissociates, it forms hydronium ( $\text{H}_3\text{O}^+$ ) and **hydroxide** ( $\text{OH}^-$ ) ions.
5. The chemical equation describing water dissociation has an associated constant known as the **water dissociation constant**.
6. The value of the water dissociation constant ( $K_w$ ) is  **$1.0 \times 10^{-14}$**  at 25°C.
7. The pH of pure water is **7**.
8. Substances with a pH below 7 are considered **acids**.
9. A **strong** acid dissociates completely in water, releasing a large number of hydrogen ions.
10. The logarithm of 100 to the base 10 is **2**.
11. The concentration of hydronium ions in neutral water is  **$1.0 \times 10^{-7}$**  moles per liter.
12. The **pOH** is calculated as the negative log of the hydroxide ion concentration.
13. The sum of the pH and the pOH in any aqueous solution at 25°C is always **14**.
14. Weak bases, like baking soda, have a pH in the range of **8-11**.
15. **Litmus** is a pH indicator that changes color based on acidity or basicity.

15 Questions

Answer Key Included

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