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Crash Course Chemistry #18: Enthalpy

Name: _____ Date: _____

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1. Energy is a _____ function, meaning it depends only on the initial and final states, not the path taken.
2. Heat and work are _____ dependent, meaning their values depend on how a process occurs.
3. In chemistry, the symbol used to represent enthalpy is a capital _____.
4. The equation for pressure-volume work is _____.
5. When a chemical reaction occurs at constant pressure, the change in enthalpy is equal to the _____ of the reaction.
6. Enthalpy is calculated as the internal energy plus the product of pressure and _____.
7. A process that releases heat to the surroundings is called _____.
8. The study of heat flow during chemical reactions is known as _____.
9. The amount of heat lost or gained when one mole of a compound is formed from its elements is the _____.
10. Elements in their most stable form at standard state are assigned a standard enthalpy of formation value of _____.
11. The Greek letter _____ is used to indicate the sum of terms in Hess's Law.
12. Standard state conditions are defined as 25°C and _____ atmosphere of pressure.
13. The equation $\Delta H = \sum \Delta H_f(\text{products}) - \sum \Delta H_f(\text{reactants})$ represents _____.
14. According to _____ Law, the total enthalpy change of a reaction is independent of the pathway taken.
15. Bonds are not just connections; they actually store and transfer _____.

Crash Course Chemistry #18: Enthalpy KEY

1. Energy is a **state** function, meaning it depends only on the initial and final states, not the path taken.
2. Heat and work are **pathway** dependent, meaning their values depend on how a process occurs.
3. In chemistry, the symbol used to represent enthalpy is a capital **H**.
4. The equation for pressure-volume work is **$W = -P\Delta V$** .
5. When a chemical reaction occurs at constant pressure, the change in enthalpy is equal to the **heat** of the reaction.
6. Enthalpy is calculated as the internal energy **plus** the product of pressure and **volume**.
7. A process that releases heat to the surroundings is called **exothermic**.
8. The study of heat flow during chemical reactions is known as **calorimetry**.
9. The amount of heat lost or gained when one mole of a compound is formed from its elements is the **standard enthalpy of formation**.
10. Elements in their most stable form at standard state are assigned a standard enthalpy of formation value of **zero**.
11. The Greek letter **Sigma (Σ)** is used to indicate the sum of terms in Hess's Law.
12. Standard state conditions are defined as 25°C and **one** atmosphere of pressure.
13. The equation $\Delta H = \sum \Delta H_f(\text{products}) - \sum \Delta H_f(\text{reactants})$ represents **Hess's Law**.
14. According to **Hess's** Law, the total enthalpy change of a reaction is independent of the pathway taken.
15. Bonds are not just connections; they actually store and transfer **energy**.

15 Questions

Answer Key Included

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