

GENERAL CHEMISTRY

STANDARD 8.9

8.9: Define and differentiate between exothermic and endothermic chemical reactions

DEFINITIONS

- **Law of Conservation of Energy:** Energy cannot be created nor destroyed in a chemical reaction
 - Rather, energy can be stored or released in chemical bonds during a reaction
- **Endothermic:** A chemical reaction that requires energy to be completed
 - Is represented by heat in the products
 - OR may be represented by a negative change in enthalpy ΔH value
- **Exothermic:** A chemical reaction that releases stored energy through the reaction
 - Is represented by heat in the reactants
 - OR may be represented by a positive change in enthalpy ΔH value

DEFINITIONS

- **Exothermic Reaction:**

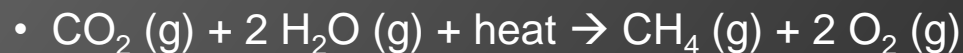
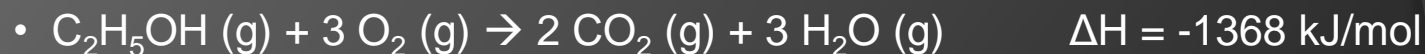


- **Endothermic:**



EXAMPLES

- Determine if the following reactions are exothermic, endothermic, or neutral:



EXAMPLES SOLUTIONS

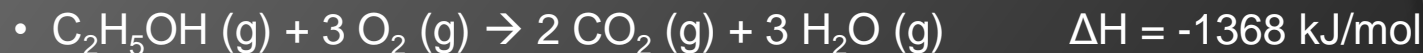
- Determine if the following reactions are exothermic, endothermic, or neutral:



Exothermic



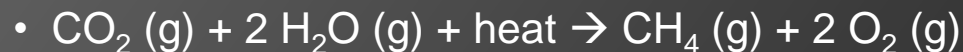
Endothermic



Exothermic



Endothermic



Endothermic