

Enthalpy Changes and Calorimetry

Central concept: **Enthalpy Changes**

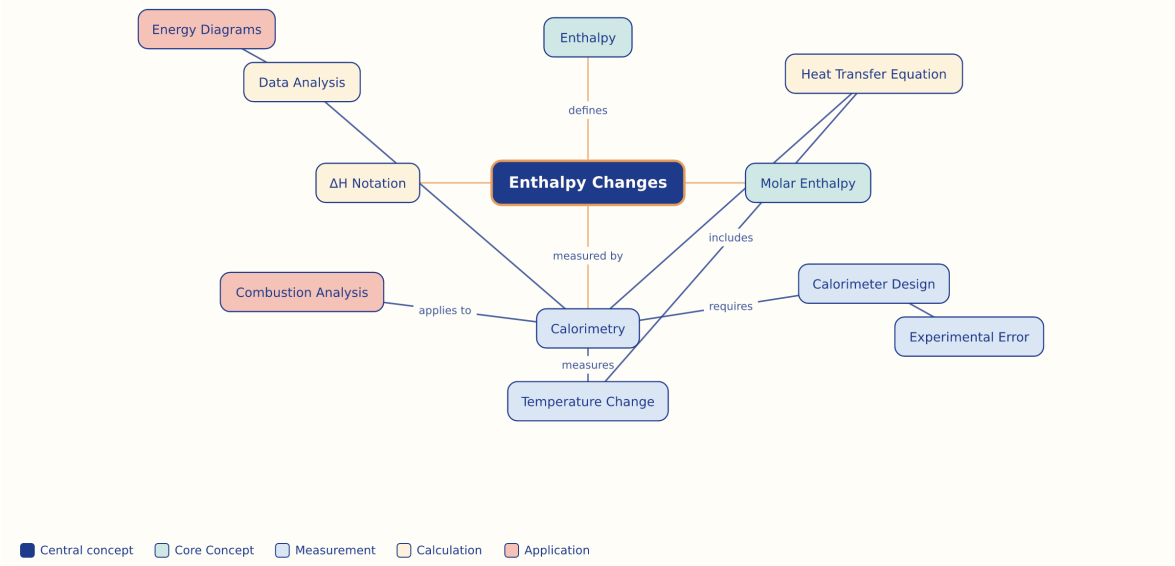
Connections

- Enthalpy Changes (defines) -> Enthalpy
- Enthalpy Changes (includes) -> Molar Enthalpy
- Enthalpy Changes (measured by) -> Calorimetry
- Enthalpy Changes (expressed as) -> ΔH , $\Delta H_f^\ominus$
- Calorimetry (uses) -> Heat Transfer Equation
- Calorimetry (requires) -> Calorimeter Design
- Calorimetry (measures) -> Temperature Change
- Heat Transfer Equation (includes) -> Temperature Change
- Calorimetry (applies to) -> Combustion Analysis
- Calorimetry (generates) -> Data Analysis
- Data Analysis (produces) -> Energy Diagrams
- Calorimeter Design (evaluated for) -> Experimental Error

Notes

- **Enthalpy Changes:** Energy change in chemical reactions at constant pressure [Outcome](#), [Outcome](#)
- **Enthalpy:** Heat content of a system; defined for chemical reactions [Outcome](#), [Outcome](#)
- **Molar Enthalpy:** Enthalpy change per mole of reactant or product [Outcome](#), [Outcome](#)
- **Calorimetry:** Experimental technique to measure heat transfer in reactions [Outcome](#), [Resource](#), [Resource](#)
- **Heat Transfer Equation:** $Q = mc\Delta T$, specific heat capacity, and temperature change [Outcome](#), [Outcome](#)
- **ΔH :** Standard notation to communicate and calculate energy changes [Outcome](#)
- **Calorimeter Design:** Simple apparatus using insulated containers to measure heat transfer [Resource](#)
- **Temperature Change:** ΔT , heat absorbed or released, [Outcome](#), [Resource](#)
- **Combustion Analysis:** Measuring heat released when substances burn in calorimetry [Resource](#)
- **Data Analysis:** Applying mathematical models to compare energy changes and assess solutions [Outcome](#)
- **Energy Diagrams:** Visual representation of energy changes in chemical reactions [Outcome](#), [Resource](#)
- **Experimental Error:** Evaluation of calorimeter precision and accuracy in repeated trials [Resource](#)

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