7 • Thermochemistry

7.1 Notes - Heat

Heat (Q)

- Units:
  - System
  - Surroundings

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Picture and Description

Chemical Equation

Energy Graph

Q

Calorimetry

Specific Heat –

\[ Q = m \times C_p \times \Delta T \]

Examples:
- How much energy is required to heat up 20.0 g of water from 30°C to 50°C? \((C_{p,\text{water}} = 4.18 \text{ J/g} \cdot ^\circ\text{C})\)
• When a 50.0 g block of copper was heated with 1046 J of energy, the temperature increased from 10.0°C to 64.3°C. What is the specific heat of copper?

• What is the final temperature when a 90.0 g of aluminum at 20°C absorbs 500 J of energy? ($C_{p,\text{Al}} = 0.897 \text{ J/g} \cdot \text{°C}$)