

Intro To Thermochemistry

Chemistry 12

1. Define the following terms

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|--------------------------------|---------------------------|---------------------------|
| a) Calorimeter | h) Heat of combustion | p) Kinetic energy |
| b) Endothermic | i) Heat of condensation | q) Phase change |
| c) Energy | j) Heat of formation | r) Potential energy |
| d) Enthalpy | k) Heat of fusion | s) Specific heat capacity |
| e) Exothermic | l) Heat of reaction | t) Temperature |
| f) First Law of Thermodynamics | m) Heat of solidification | u) Thermochemistry |
| g) Heat | n) Heat of solution | v) Thermodynamics |
| | o) Heat of vaporization | |

2. Explain the relationship between temperature and heat.

3. Provide examples of ways in which you rely on energy from chemical reactions.

4. Our society depends primarily on energy from chemical sources such as fossil fuels. What are some alternative energy sources?

5. a) List two energy-consuming devices that you use every day that are essential; two that are practical, efficient, or convenient; and two that are non-essential.

b) For each example in part (a), identify the form of the energy (e.g., electrical energy, heat, light, sound, mechanical energy, etc.)

c) For each example in part (a), identify the source from which the energy was obtained (e.g., chemical, nuclear, solar, geothermal, etc.).

6. Many different technologies, including chemical, nuclear, hydro, geothermal, solar, wind, tidal, and ocean thermal, are used to produce electrical energy. The choice of technology always involves trade-offs of competing values; for example, considerations of safety, cost, and environmental factors. List four different kinds of electric power generating plants and list two (or more) advantages and two (or more) disadvantages for each.