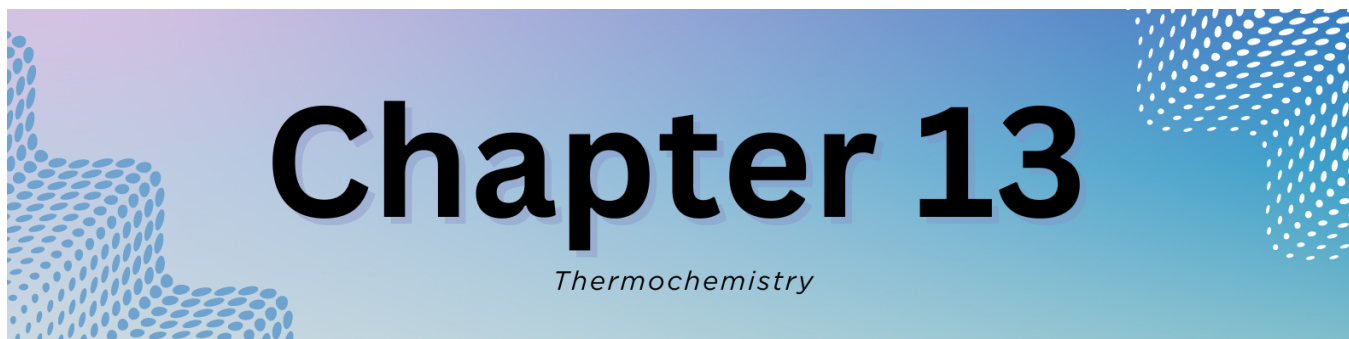


CHAPTER OVERVIEW

13: Thermochemistry



Our contemporary society requires the constant expenditure of huge amounts of energy to heat our homes, provide telephone and cable service, transport us from one location to another, provide light when it is dark outside, and run the machinery that manufactures material goods. The United States alone consumes almost 10^6 kJ per person per day, which is about 100 times the normal required energy content of the human diet. This figure is about 30% of the world's total energy usage, although only about 5% of the total population of the world lives in the United States.

In contrast, the average energy consumption elsewhere in the world is about 10^5 kJ per person per day, although actual values vary widely depending on a country's level of industrialization. In this chapter, we will discuss the nature of energy and how chemical reactions consume and release energy from/to their surroundings.

Chapter Sections

[13.1: The Nature of Energy](#)

[13.2: The First Law of Thermodynamics](#)

[13.2.1: Heat and Work](#)

[13.3: Enthalpy, \$\Delta H\$, and Heat of Reaction](#)

[13.3.1: Calorimetry](#)

[13.3.2: Hess' Law](#)

[13.3.3: Standard Enthalpy of Formation](#)

[13.4: Heat Transfer Involving Phase Changes](#)

References and Attributions

1. Joshua Halpern, Chemistry: The Central Science by Brown, LeMay, Burston, Murphy and Woodward (<https://chem.libretexts.org/Bookshel...hermochemistry>)

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