

CHAPTER 6 LEARNING OBJECTIVES

1. Explain the differences between energy, work, heat, and temperature.
2. Convert between units of calories, Calories, and Joules.
3. State the first law of thermodynamics.
4. Describe how the change in internal energy of a system is related to the exchanges of heat and work between the system and its surroundings.
5. Explain the follow terms: state function, heat capacity, specific heat, enthalpy, standard state, and standard enthalpy of formation.
6. Calculate the heat capacity of a calorimeter.
7. Calculate the enthalpy change in a process occurring at constant pressure using calorimetric data.
8. Sketch an energy diagram such as that shown in Figure 6.13 given the energy changes in the processes involved.
9. Calculate the enthalpy of a reaction using Hess's law and standard enthalpies of formation of reactants and products.

Review the “In Closing” and “Key Terms” sections of Chapter 6 (pages 260-261).