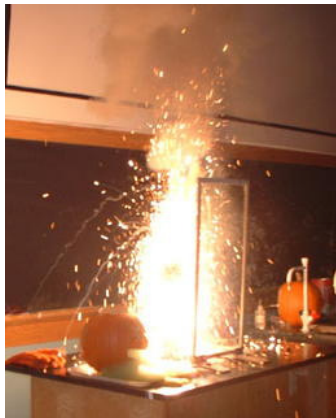


Chapter 16 Study Guide

Heat and Chemical Reactions

Chemistry I



Chapter 16 Objectives

1. Explain what energy is and distinguish between potential and kinetic energy.
2. Relate chemical potential energy to the heat lost or gained in a chemical reactions.
3. Calculate the amount of heat absorbed or released by a substance as its temperature changes.
4. Describe how a calorimeter is used to measure energy absorbed or released.
5. Explain the meaning of enthalpy and enthalpy change in chemical reactions and processes.
6. Write thermochemical equations for chemical reactions and other processes.
7. Describe how energy is lost or gained during changes of state.
8. Calculate the heat absorbed or released in a chemical reaction.
9. Use Hess's law to calculate the enthalpy change for a reaction.
10. Explain the basis for the table of standard enthalpies of formation.
11. Calculate ΔH using thermochemical equations.
12. Determine the enthalpy change for a reaction using standard enthalpies of formation data.
13. Differentiate between spontaneous and nonspontaneous processes.
14. Explain how changes in entropy and free energy determine the spontaneity of chemical reactions and other processes.

Activities

- ___ Assignment on concepts from Chapter 16 (first item on assignment list below)
- ___ Three opening day activities
- ___ Hess's Law Lab
- ___ Optional student review and self-assessment from the web site www.chemistrymc.com
Username: cmc2005
Password: t8chefec

Assignments

___ If you scored an 80% or higher on the last test, you may take reading notes on your own. If you scored below an 80% on the last test, you need to answer questions 46-72 at the end of the chapter in place of reading notes.

___ Practice Problems:

Homework must be turned in on 8 1/2 x 11 inch unlined paper. Homework must be completed and checked before the day of the chapter test, and it is the responsibility of the student to make sure that the homework is complete and corrected.