

3.6: Thermochemistry



When a chemical reaction occurs, there is usually a change in temperature of the chemicals themselves and of the beaker or flask in which the reaction is carried out. If the temperature increases, the reaction is **exothermic**—energy is given off as heat when the container and its contents cool back to room temperature. (**Heat** is energy transferred from one place to another solely because of a difference in temperature.) An **endothermic** reaction produces a decrease in temperature. In this case heat is absorbed from the surroundings to return the reaction products to room temperature. **Thermochemistry**, a word derived from the Greek *thermé*, “heat,” is the measurement and study of energy transferred as heat when chemical reactions take place. It is extremely important in a technological world where a great deal of work is accomplished by transforming and harnessing heat given off during combustion of coal, oil, and natural gas.

If your workstation is authorized to view JCE Software, you will see a video below which shows an example of an endothermic reaction. Ammonium thiocyanate is mixed with barium hydroxide, and the reaction takes in enough heat to freeze water.

Find others videos by searching YouTube for "endothermic reaction".

This page titled [3.6: Thermochemistry](#) is shared under a [CC BY-NC-SA 4.0](#) license and was authored, remixed, and/or curated by [Ed Vitz](#), [John W. Moore](#), [Justin Shorb](#), [Xavier Prat-Resina](#), [Tim Wendorff](#), & [Adam Hahn](#).