

Unit 12 – Thermodynamics

C2.2e Compare the entropy of solids, liquids, and gases.

C2.3a Explain how the rate of a given chemical reaction is dependent on the temperature and the activation energy.

C2.3b Draw and analyze a diagram to show the activation energy for an exothermic reaction that is very slow at room temperature.

C3.1a Calculate the ΔH for a given reaction using Hess' Law.

C3.1b Draw enthalpy diagrams for exothermic and endothermic reactions.

C3.2a Describe the energy changes in photosynthesis and in the combustion of sugar in terms of bond breaking and bond making.

C3.4B Explain why chemical reactions will either release or absorb energy.

C3.4d Draw enthalpy diagrams for reactants and products in endothermic and exothermic reactions.

C3.4e Predict if a chemical reaction is spontaneous given the enthalpy (ΔH) and entropy (ΔS) changes for the reaction using Gibb's Free Energy, $\Delta G = \Delta H - T\Delta S$ (Note: mathematical computation of ΔG is not required.)

C3.4f Explain why some endothermic reactions are spontaneous at room temperature.