

CHAPTER OVERVIEW

15: Chemical Potential, Fugacity, Activity, and Equilibrium

In Chapters [11-14](#), we define chemical potential, fugacity, and activity. We find numerous relationships among these quantities. In Sections [15.1](#) and [15.2](#), we summarize the principal relationships between chemical potential and fugacity and between chemical potential and activity. Thereafter, we introduce some basic ideas about the chemical potentials, fugacities, and activities of liquids, solids, solvents, and solutes. We use these ideas to relate standard Gibbs free energy changes to fugacities and activities in systems at equilibrium.

[15.1: The Chemical Potential and Fugacity of a Gas](#)

[15.2: The Chemical Potential and Activity of a Gas](#)

[15.3: The Pressure-dependence of the Fugacity and Activity of a Condensed Phase](#)

[15.4: Standard States for the Fugacity and Activity of a Pure Solid](#)

[15.5: The Chemical Potential, Fugacity, and Activity of a Pure Solid](#)

[15.6: Chemical Potential, Fugacity, and Equilibrium](#)

[15.7: Chemical Potential, Activity, and Equilibrium](#)

[15.8: The Rate of Gibbs Free Energy Change with Extent of Reaction](#)

[15.9: Problems](#)

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