

I Thermodynamic Principles

1 Introduction and Definition of Terms

2 The First Law of Thermodynamics

3 The Second Law of Thermodynamics

4 The Statistical Interpretation of Entropy

5 The Fundamental Equations and Their Relationships

6 Heat Capacity, Enthalpy, Entropy, and the Third Law of Thermodynamics

II Phase Equilibria

7 Phase Equilibrium in a One-Component System

8 The Behavior of Gases

9 The Behavior of Solutions

10 Gibbs Free Energy Composition and Phase Diagrams of Binary Systems

III. Reactions and Transformations of Phases

11 Reactions Involving Gases

12 Reactions Involving Pure Condensed Phases and a Gaseous Phase

13 Reaction Equilibria in Systems Containing Components in Condensed Solution

14 Electrochemistry

15 Thermodynamics and Phase Transformations

Appendices

A. Selected Thermodynamic and Thermochemical Data

B. Exact Differential Equations

C. The Generation of Additional Thermodynamic Potentials as Legendre Transformations

Nomenclature

Answers

Index