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 - 1.2 Some Concepts from Classical Mechanics
 - 1.3 Systems, States, and Equilibrium
 - 1.4 Thermal Equilibrium
 - 1.5 Pressure and Boyle's Law Biography: Robert Boyle
 - 1.6 Gay-Lussac's (Charles's) Law
 - 1.7 The Ideal Gas Thermometer
 - 1.8 The Equation of State for an Ideal Gas
 - 1.9 The Kinetic-Molecular Theory of Ideal Gases
 - 1.10 The Barometric Distribution Law
 - 1.11 The Maxwell Distribution of Molecular Speeds and Translational Energies
 - 1.12 Real Gases
 - 1.13 Equations of State
 - 1.14 The Virial Equation Appendix: Some Definite and Indefinite Integrals Often Used in Physical Chemistry
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 - 2.2 States and State Functions
 - 2.3 Equilibrium States and Reversibility
 - 2.4 Energy, Heat, and Work
 - 2.5 Thermochemistry
 - 2.6 Ideal Gas Relationships
 - 2.7 Real Gases
- 3 The Second and Third Laws of Thermodynamics Biography: Rudolph Julius Emmanuel Clausius
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 - 3.3 Molecular Interpretation of Entropy
 - 3.4 The Calculation of Entropy Changes
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 - 3.6 Conditions for Equilibrium
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 - 4.2 Equilibrium in Nonideal Gaseous Systems
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 - 4.5 Tests for Chemical Equilibrium
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- 5.3 Classification of Transitions in Single-Component Systems
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- 7.7 Ion Conductivities
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