1.	Record Nr.	UNINA9910458253303321
	Autore	Ott J. Bevan <1934->
	Titolo	Chemical thermodynamics [[electronic resource]] : advanced applications / / J. Bevan Ott and Juliana Boerio-Goates
	Pubbl/distr/stampa	San Diego, Calif. ; ; London, : Academic Press, c2000
	ISBN	1-281-51455-1
		9786611514556
		0-08-050099-4
	Descrizione fisica	1 online resource (465 p.)
	Altri autori (Persone)	Boerio-GoatesJuliana
	Disciplina	541.3/69
	Soggetti	Thermodynamics
		Thermodynamic equilibrium
		Electronic books.
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Front Cover; Chemical Thermodynamics: Advanced Applications; Copyright Page; Contents; Preface to the Two-Volume Series; Preface to the Second Volume; Chapter 11. Summary of Thermodynamic Relationships; 11.1 Thermodynamic Relationships; 11.2 Phase Equilibria Relationships; 11.3 Fugacity; 11.4 Activity and Standard States; 11.5 Thermodynamics of Mixtures; 11.6 Chemical Equilibrium; 11.7 Electrochemical Cells; 11.8 Calculations from Statistical Thermodynamics; References; Chapter 12. Thermodynamics of Other Variables; 12.1 Effect of Gravitational Fields; 12.2 Effect of Centrifugal Fields
		12.3 Thermodynamics of SurfacesReferences; Chapter 13. Applications of Thermodynamics to Phase Equilibria Studies of Pure Substances; 13.1 Classification of Phase Transitions in Pure Materials; 13.2 Modern Theories of Phase Transformations; References; Chapter 14. Applications of Thermodynamics to Phase Equilibria Studies of Mixtures; 14.1 Phase Changes for Mixtures; 14.2 (Vapor + Liquid) Equilibria; 14.3 (Liquid + Liquid) Equilibrium; 14.4 (Fluid + Fluid) Equilibrium; 14.5 (Solid + Liquid) Phase Equilibrium; References; Chapter 15. Applications of Thermodynamics to Chemical Processes

15.1 The Haber Cycle: Application to an Industrial Process15.2 The Synthesis of Diamond: Application to Phase Changes; 15.3 Applications of Thermodynamics to Geological Systems; 15.4 Thermodynamics of Complexation with Macrocyclic Ligands; References; Chapter 16. Applications of Thermodynamics to Biological Processes; 16.1 Metabolism and Work; 16.2 Biopolymer Stabilities; References; Chapter 17. Applications of Thermodynamics to Nonelectrolyte Solutions; 17.1 Excess Thermodynamic Properties; 17.2 The Excess Thermodynamic Properties and (Liquid + Liquid) Phase Equilibrium

17.3 The Excess Thermodynamic Properties and (Fluid + Fluid) Phase EquilibriumReferences; Chapter 18. Applications of Thermodynamics to Solutions Containing Electrolyte Solutes; 18.1 Electrolyte Solutions; 18.2 Ion Association; 18.3 Surfactant Solutions; References; APPENDIX 5. Thermodynamic Properties of Selected Chemical Substances; Table A5.1 Thermodynamic Functions; Table A5.2 Standard Heat Capacities, Entropies, Enthalpies, and Gibbs Free Energies of Formation of Selected Substances at T = 298.15 K

Table A5.3 Standard Heat Capacities, Entropies, Enthalpies, and Gibbs Free Energies of Formation of Some Common Ions at T = 298.15 KTable A5.4 Enthalpies and Temperatures of Fusion and Vaporization; Table A5.5 Coefficients at P = 0.1 MPa for the Heat Capacity Equation; Table A5.6 Standard Reduction Potentials at T = 298.15 K; APPENDIX 6. Calculations from Statistical Thermodynamics; A6.1 Atomic and Molecular Energy Levels; A6.2 The Partition Function; A6.3 Relationship Between the Partition Function and the Thermodynamic Functions for the Ideal Gas; A6.4 Partition Functions for the Ideal Gas

A6.5 Calculation of the Thermodynamic Properties from the Energy Levels

Sommario/riassunto	This book is an excellent companion to Chemical Thermodynamics: Principles and Applications. Together they make a complete reference set for the practicing scientist. This volume extends the range of topics and applications to ones that are not usually covered in a beginning thermodynamics text. In a sense, the book covers a ""middle ground"" between the basic principles developed in a beginning thermodynamics textbook, and the very specialized applications that are a part of an ongoing research project. As such, it could prove invaluable to the practicing scientist who needs to apply t