

1. Record Nr.	UNINA9910131529403321
Autore	Soustelle Michel
Titolo	Chemical equilibria // Michel Soustelle
Pubbl/distr/stampa	Hoboken, NJ : , : Wiley, , 2015
ISBN	1-119-17856-8 1-119-17854-1 1-119-17855-X
Descrizione fisica	1 online resource (179 p.)
Collana	Chemical engineering series : chemical thermodynamics set ; ; volume 4
Disciplina	541.392
Soggetti	Thermodynamics - Mathematical models Chemical equilibrium - Mathematical models Phase transformations (Statistical physics)
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	Table of Contents; Title; Copyright; Preface; Notations and Symbols; 1: Physico-Chemical Transformations and Equilibria; 1.1. Characteristic parameters of physico-chemical transformations; 1.2. Entropy production during the course of a transformation in a closed system; 1.3. Affinity of a transformation; 1.4. De Donder's inequality - direction of the transformations and equilibrium conditions; 1.5. Heats of transformation; 1.6. Set of points representing the equilibrium states of a transformation; 1.7. Closed systems accommodating multiple reactions 1.8. Direction of evolution and equilibrium conditions in an open system 1.9. Azeotropic transformations; 2: Properties of States of Physico-Chemical Equilibrium; 2.1. Laws of displacement of an equilibrium; 2.2. Properties of all the equilibria in a system; 2.3. Phase laws; 2.4. Indifferent states; 2.5. Thermodynamically-equivalent systems; 2.6. Stability of equilibria; 3: Molecular Chemical Equilibria; 3.1. Law of mass action - equilibrium constants; 3.2. Graphical representations of equilibria - pole diagrams; 3.3. Representation of the evolution of an equilibrium with the temperature 3.4. Binary diagrams for chemical equilibrium 3.5. Ternary diagrams of

chemical equilibria; 3.6. Quaternary diagrams of chemical equilibria; 4: Determination of the Values Associated with Reactions - Equilibrium Calculations; 4.1. Reminders of a few thermodynamic relations; 4.2. Enthalpies of reaction - thermochemistry; 4.3. Reaction entropies; 4.4. Specific heat capacities; 4.5. Experimental determination of the equilibrium constants; 4.6. Calculation of the equilibrium constants on the basis of other thermodynamic data
4.7. Determination of the equilibrium constants on the basis of spectral data and statistical thermodynamics
4.8. Thermodynamic tables and databanks; 4.9. Estimation of thermodynamic data; 4.10. Thermodynamic calculations for complex systems; APPENDICES; Appendix 1: Recap on the Reference States of Solutions; A1.1. Concentration and molar fraction; A1.2. Chemical potentials and activity coefficients; A1.3. Characterization of the imperfection of a real solution by the excess Gibbs energy; Appendix 2: Recap of statistical thermodynamics; A2.1. The three branches of statistics
A2.2. Partition functions of a molecule object
A2.3. Canonical partition function; A2.4. Canonical partition functions and thermodynamic functions; A2.5. Equilibrium constants and molecular partition functions; Bibliography; Index; End User License Agreement
