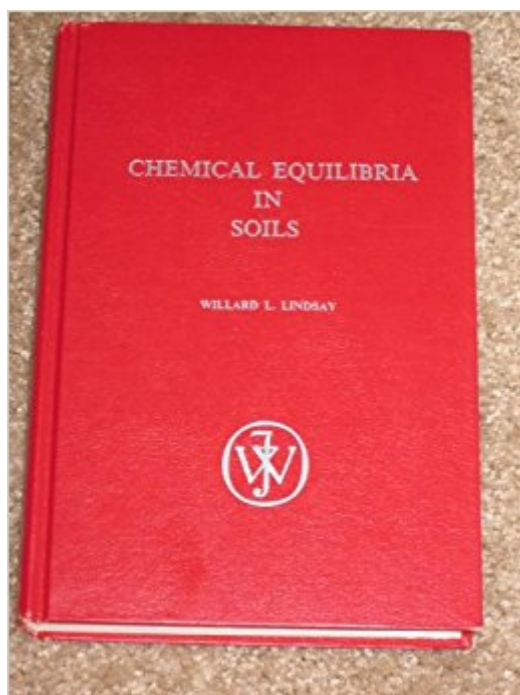


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Chemical Equilibria In Soils



Synopsis

Originally published in 1979, this book is the result of 20 years' experience in teaching soil chemistry and directing graduate research in soil science. Its objective is to bridge the gap between soil science and soil chemistry and to show that most reactions taking place in soils can be understood and predicted from basic chemical relationships. Emphasis is placed on minerals and solid phases in soils that dissolve and precipitate, and in doing so, control the composition of the soil solution. This is the only comprehensive treatment of chemical equilibria in the soil environment that is available. Other texts deal well with the kinetics of reactions in soils but touch lightly on the equilibrium concepts. This text is intended for soil scientists, plant nutritionists, aquatic chemists, geochemists, sanitary and water engineers, environmentalists, and others who are concerned with the reactions, solubility relationships, and fate of chemical substances in soils. This text is more universal in its application than the title may suggest. Chemical equilibrium concepts are commonly used in hydrologic, geologic, and environmental engineering applications. Any earth surface system whose character is influenced by species in aqueous solution can be analyzed by the concepts and methodology described by Dr. Lindsay. The types of problems to which application of equilibrium analysis are valuable include agricultural soil amendments and fertilization, aquaculture media, waste treatment systems, soil and groundwater contamination and remediation, mine waste and drainage mitigation, and any soil or hydrologic environment that has been contaminated. Problems in these areas are common but critical issues in our modern world, and this book provides the theoretical and empirical basis needed by environmental scientists and engineers. Dr. Lindsay's approach combines basic chemical equilibrium theory with extensive empirical knowledge derived from his own and many other's work in equilibrium speciation. There are several commonly available collections of chemical equilibrium data but this text provides this information in the context of soil, agricultural, and environmental problems and analysis. Chemical speciation computer models, though common now, were new when this text was first published, yet these models compliment rather replace this information. The tables and graphs are well presented and invaluable references. The problems at the end of each section emphasize common traditional soil and agricultural situations, useful for both the new student and those refreshing their memory. A very approachable book, and still useful as a reference tool. --This text refers to the Paperback edition.

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This book is useful for more than soils. It is useful for other environmental problems such as in natural water solutions.

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