



The Chemistry of Silica: Solubility, Polymerization, Colloid and Surface Properties and Biochemistry of Silica

By Ralph K. Iler

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Surfactants and Interfacial Phenomena Milton J. Rosen Bridging the gap between purely theoretical aspects of surface chemistry and the purely empirical experience of the industrial technologist, this book applies theoretical surface chemistry to understanding the action of surfactants in modifying interfacial phenomena. It surveys the structural types of commercially available surfactants and discusses interfacial phenomena, the physicochemical principles underlying the action of surfactants in each phenomenon, and the effect of structural changes in the surfactants and environmental changes on their action. Tables of data on various interfacial properties of surfactants, compiled and calculated from the latest scientific literature, are included. 1978 304 pp. An Introduction to Clay Colloid Chemistry, 2nd Ed. H. van Olphen This book provides valuable guidance in research and design efforts by giving a clear understanding of principles and concepts of colloid chemistry as applied to clay systems. Updated and enlarged, this edition includes new information on surface characterization and adsorption mechanisms; recent results in the area of clay-organic interaction--the intercalation and intersalation of kaolinite minerals; and increased attention to the possible role of clays in biological evolution. 1977 318 pp. Physicochemical Processes for Water Quality Control Walter J. Weber, Jr. Focusing on physicochemical rather than biological processes, this book presents a comprehensive treatise on the treatment of municipal and industrial water and wastewater. All of the physicochemical processes important to municipal and industrial water and wastewater treatment--coagulation, filtration, membrane processes, chemical oxidation, and others--are included and each is covered thoroughly from principle through application. To maintain a high level of expertise, contributions have been incorporated from specialists actively involved in research or engineering applications in each area considered. 1972 640 pp.

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Editorial Review

From the Publisher

Provides a comprehensive account of the silica chemistry involved in a wide range of research and development activities, and a wealth of information on production and production control. Discusses the solubility of different forms of silica and the factors that influence dissolution and deposition, comparing and recommending analytical methods. Describes the mechanism of polymerization of silicic acid and formation of colloid, and the mechanism by which silica powders and gels are formed and their properties controlled. Examines the many types and uses of commercial concentrated sols, gels, and ultrafine powders. Covers the applications and biochemical properties of the surface chemistry of silica, and the role of silica in different life forms. Includes extensive references.

From the Inside Flap

Silica, the major component of the earth's solid surface and the constituent of ordinary sand, becomes involved at some point in a great many phases of modern technology and science. It is an essential material in many, if not all, forms of life. Its role in human disease, aging, and health is just beginning to be explored. Here is a comprehensive account of the basic chemistry involved in a wide range of research and development activities, as well as a wealth of information on production and production control. Beginning with the solubility of different forms of silica and the factors that influence dissolution and deposition, the solution chemistry of silica is introduced. The author also compares and recommends analytical methods. The digest of all currently available information provides a solid background as to the nature of soluble silicates and particularly the mechanism of polymerization of silicic acid and formation of colloid. For the first time, the mechanism by which silica sols, powders and gels are formed and their properties controlled is clearly described. Next, the many types and uses of commercial concentrated sols, gels, and ultrafine powders are examined, followed by a discussion of the biochemical properties and many applications of the surface chemistry of silica. The final chapter draws together all aspects of the occurrence and importance of silica in different life forms. Those engaged in research, development, and production in the many diverse fields and industries in which silica plays a vital role—such as chemistry, biology, medicine, agriculture, metallurgy, and mining—will find *The Chemistry of Silica* an indispensable reference.

From the Back Cover

Surfactants and Interfacial Phenomena Milton J. Rosen Bridging the gap between purely theoretical aspects of surface chemistry and the purely empirical experience of the industrial technologist, this book applies theoretical surface chemistry to understanding the action of surfactants in modifying interfacial phenomena. It surveys the structural types of commercially available surfactants and discusses interfacial phenomena, the physicochemical principles underlying the action of surfactants in each phenomenon, and the effect of structural changes in the surfactants and environmental changes on their action. Tables of data on various interfacial properties of surfactants, compiled and calculated from the latest scientific literature, are included. 1978 304 pp. *An Introduction to Clay Colloid Chemistry*, 2nd Ed. H. van Olphen This book provides valuable guidance in research and design efforts by giving a clear understanding of principles and concepts of colloid chemistry as applied to clay systems. Updated and enlarged, this edition includes new information on surface characterization and adsorption mechanisms; recent results in the area of clay-organic interaction—the intercalation and intersalation of kaolinite minerals; and increased attention to the possible role of clays in biological evolution. 1977 318 pp. *Physicochemical Processes for Water Quality Control* Walter J. Weber, Jr. Focusing on physicochemical rather than biological processes, this book presents a comprehensive treatise on the treatment of municipal and industrial water and wastewater. All of the

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Users Review

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Erik Herrera:

Typically the book *The Chemistry of Silica: Solubility, Polymerization, Colloid and Surface Properties and Biochemistry of Silica* has a lot of knowledge on it. So when you read this book you can get a lot of benefit. The book was written by the very famous author. This article's author makes some research just before writing this book. This kind of book is very easy to read; you may get the point easily after perusing this book.

Robert Russell:

Reading can be called a thought hangout, why? Because when you find yourself reading a book specially a book entitled *The Chemistry of Silica: Solubility, Polymerization, Colloid and Surface Properties and Biochemistry of Silica* your mind will drift away through every dimension, wandering in each and every aspect that maybe unidentified for but surely might be your mind friends. Imagining just about every word written in an e-book then become one application from conclusion and explanation in which maybe you never get ahead of. *The Chemistry of Silica: Solubility, Polymerization, Colloid and Surface Properties and Biochemistry of Silica* giving you another experience more than blown away the mind but also giving you useful data for your better life within this era. So now let us explain to you the relaxing pattern here is your body and mind will likely be pleased when you are finished examining it, like winning a game. Do you want to try this extraordinary wasting spare time activity?

Marlene Clabaugh:

Is it an individual who having spare time in that case spend it whole day through watching television programs or just telling lies on the bed? Do you need something new? This *The Chemistry of Silica: Solubility, Polymerization, Colloid and Surface Properties and Biochemistry of Silica* can be the solution, oh how comes? It's a book you know. You are and so out of date, spending your free time by reading in this completely new era is common not a nerd activity. So what these ebooks have than the others?

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