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### A review of: "Porous Silica - Its Properties and Uses as Support in Column Liquid Chromatography, by K.K. Unger (Vol. 16, Journal of Chromatography Library), Elsevier Scientific Publishing Company, Amsterdam, 1979, 336 pp."

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BOOK REVIEW

Porous Silica - Its Properties and Uses as Support in Column Liquid Chromatography, by K.K. Unger (Vol. 16, Journal of Chromatography Library), Elsevier Scientific Publishing Company, Amsterdam, 1979, 336 pp.

A chromatographer today spends so much time dealing with tools and fittings, push buttons and CRT displays, sample logging and data handling, that little time remains to focus on a better understanding of the separation at hand and the mechanism by which it is achieved. All too often, the modern practice of chromatography causes even the best of chemists to ignore their chemical common sense and rely instead on mythology and folklore when seeking to explain their observations or predict experimental results. The consequence of all this is the development not of the physicochemical science, but, as one colleague puts it, the philosophy of chromatography.

It takes a good deal of experience and effort to pull together from diverse disciplines the data and dogma, culling fact from fiction, fundamental to an interdisciplinary field such as chromatography. We are fortunate indeed that Professor Unger, with his experience, has put forth such an effort and chosen to share it with us in his new treatise.

Silica, usually hidden within steel or plastic and therefore taken for granted, is the stuff in, on, around, or through which most modern chromatographic separations occur. Yet within the confines of chromatographic practice, it is poorly understood. Porous Silica treats the subject of silica in systematic and comprehensive fashion. Early chapters deal with the general properties, pore structure, surface chemistry, chemical modification, and characterization of particle size, shape and distribution of silica. Later chapters then relate the physics and chemistry to the packing and performance of silica columns and to the use of silica in various modes of separation including liquid-solid, liquid-liquid, ion-exchange, and size-exclusion chromatography.

Each chapter concludes with a list of references (a few from 1978, but most from 1977 and earlier). The book contains a detailed list of symbols and abbreviations (many of which, unfortunately, perforce have more than one meaning) and a very complete subject index. There is also the now customary, al-

ways out-of-date before appearing in print, appendix listing commercially available silica packings which can aid the chromatographer as a reference to earlier papers, but not as a buying guide for today's rapidly changing marketplace. This latter purpose is served in a very limited fashion by the inclusion at the rear of the volume of four commercial advertisements which apparently did not significantly defray the publishing costs as reflected in the price of this monograph.

The text is liberally supplemented with published data in the form of charts, tables, and figures. The printing and binding is of the high quality that we have come to expect of the Journal of Chromatography Library series.

Porous Silica is written in a style consistent with the thorough review that it is, but it cannot be considered light reading. This text is very meaty, especially in the important early chapters, and requires the reader to sink his teeth into it. But the effort is worthwhile. Professor Unger's valuable contribution to the chromatographic literature can be highly recommended to anyone interested in a better understanding of the science of chromatography.

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