Books

Industrial Solvents Handbook, 2nd Edition

Nicholas P. Cheremisinoff, Marcel Dekker, Inc., New York
346 pp., $175.00, 2003

This second edition was written at the request of the publisher who recognized the importance of the original volume prepared by Wesley Archer, and the need for its updating. The present volume makes ample use of Archer's original work, but, in addition, expands upon it with more extensive and broader discussions covering safe handling practices, health effects, physical properties, and chemical synthesis routes to some of the more important solvents.

The book has two main parts. Part 1 focuses on the properties and selection of major classes of organic solvents, and has three sections. Section 1 covers general properties and descriptions of important classes of industrial organic solvents. Section 2 provides an overview of environmental and OSHA legislation. The third section describes the use of the Hansen solubility theory in the selection of solvents in industrial applications or formulations. It contains an extensive compilation of solubility parameters for solvents. It also has a short, but useful, review of safe practices to avoid or minimize health hazards in handling solvents.

Part 2 provides chemical-specific profiles on 204 major solvents and other chemicals of importance to coating and blending applications. Surprisingly, data on some commonly-used solvents such as dimethylformamide and tetrahydrofuran are not included. The reader will find detailed information on the chemical formula, synonyms, physical properties, thermodynamic properties, health and toxicity data, fire-fighting and explosion characteristics, and other relevant information. There is also a glossary of terms at the end of the volume and an extensive subject index.

This book will be of use to chemists involved in R&D, chemical engineers involved in process development and process design, environmental (pollution prevention) specialists, and process safety/loss prevention specialists.

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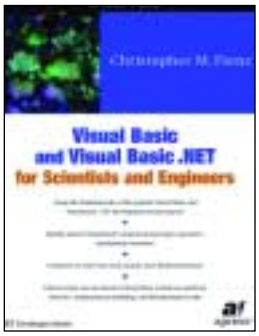
Visual Basic and Visual Basic.Net for Scientists and Engineers

Christopher M. Frenz
Springer-Verlag, New York
400 pp., $34.95, 2002



This book is an easy introduction to Visual Basic and Visual Basic.NET for technical people at the beginning to intermediate level. Intended for those with little or possibly no prior background in computer programming, it covers the fundamental concepts of variables, data types, arrays, loops and operators. Wiforms are explained, as well as how to get data from external sources, programming spreadsheets and scientific graphics. There are also chapters dedicated to debugging, error-handling and deploying the application.

A chapter on mathematical modeling covers concepts that are central to all mathematical modeling work. A simple mathematical modeling example is provided to design a chemical plant. Four unit operations are also modeled: a mixer, a chemical reactor, and two separators.

The book highlights the differences between Visual Basic and .NET programming, which would be useful to programmers at any experience level. The examples of how to design professional graphical user interfaces to facilitate interaction and presentation of data are especially valuable.

This book would be ideal for students or technical professionals with little prior experience in Visual Basic programming, as well as programmers needing an overview of the latest developments offered with Visual Basic.NET.

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Statistics and Probability for Engineering Applications

William DeCoursey, Elsevier Butterworth Heinemann, Burlington, MA
396 pp., $59.99, 2003

More than ever, the U.S. industry is using statistical methods to improve its competitive edge in the world market. It is becoming more imperative for graduate engineers to have solid statistical know-how. Yet engineers in industry typically are not well-prepared to use statistics and are fuzzy about how to apply statistical tools and techniques. This valuable reference makes statistical methods easier and more accessible to engineers. Although the book can be read sequentially, like a normal textbook, it is designed to be used as a handbook, pointing the reader to the topics and sections pertinent to a particular type of statistical problem.