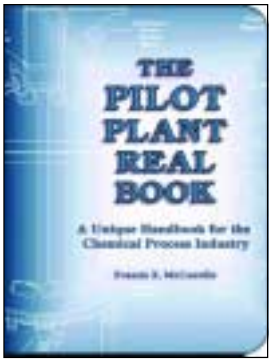
The Pilot Plant Real Book: A Unique Handbook for the Chemical Process Industry



Francis X. McConville, FXM Engineering and Design, Worcester, MA, Spiral Edition, 312 pp., $89.95, 2002

Publishers hope their books are bought. Writers hope their book will be used, but they rejoice if their book is at least read and retained on a bookshelf. Most chemical engineering books are not used because they contain so little information of practical use to a plant engineer or a pilot plant engineer.

The "Pilot Plant Real Book" by Francis McConville is a different kind of chemical engineering book. It contains no differential equations. Instead, it contains a plethora of example calculations pertaining to chemical engineering, including calculations for mixing scale-down, crystallization yield, heat-transfer coefficient estimation, overall heat-transfer sizing, and liquefied-gas cylinder discharge rate. A box isolates each example from the text.

The book contains eleven chapters. The best are "Electricity and Instrumentation," "Chemical Hygiene and Safety" and "Materials Selection." These chapters contain difficult-to-find data required to design, build and operate a pilot plant. The "Electricity and Instrumentation" chapter contains drawings of wiring connections and receptacles with NEMA identifiers, as well as the three-prong polarizable receptacle. It also has a table codifying the markings on explosionproof equipment.

The "Solvents" chapter contains two particularly good plots: one is the NFPA Solvent Flammability Classifications; the other gives flashpoint as a function of 25°C vapor pressure. This type of data is scattered throughout the open literature and is sometimes difficult to locate. McConville has put all the common solvents on one plot for immediate use.

The "Compressed Gases" chapter contains a cylinder specification and conversion chart, and an example codifying the markings on a gas cylinder. It also contains a line drawing of each cylinder type with height, tare weight and internal volume.

The "Chemical Hygiene and Safety" chapter contains a multitude of tables and data required for management-of-change procedures and for process hazards analyses. A particularly impressive table presents substance and glove type, with the glove choices graded from A (safest) to D (very poor). This is an important table for any person working with chemicals and solvents. All the important industrial chemicals are included in this table.

The chapter entitled "Materials Selection" has a useful material compatibility table. The remaining chapters are "The Pilot Plant," "Equipment and Operations," "Liquid Handling," "Heat Transfer," "Chemical Data" and "Miscellaneous." This book also contains a bibliography and "Additional Recommended Reading" addendums.

The "Pilot Plant Real Book" can be used in laboratory and pilot plant environments. It has a spiral binding, so it will lay flat at the selected page. The contents page provides a color code at the edge of the page for each chapter, which makes it easy to locate the chapter in the book, since each chapter is correspondingly tabbed with a matching color. The pages are heavy, making them durable for use in non-office environments, and they are rounded; thus, they will not become bent or frayed. Line drawings accompany each discussion of equipment and each drawing is clearly labeled. Data figures are also clearly drawn and well-labeled; *i.e.,* they are easy to read and interpret.

The best recommendation a reviewer can give is that he bought a copy of the reviewed book for each of his colleagues, which is what this reviewer has done.

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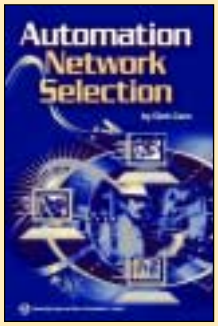

Automation Network Selection

Dick Caro, ISA - The Instrumentation, Systems and Automation Society Research Triangle Park, NC, 161 pp., $46.00, 2003

Are you trying to make sense of all the different industrial automation networks on the market today? Whether you're a novice industrial network user or someone who simply needs to brush up on the technology, "Automation Network Selection" will help you better understand and select the "right" network for a given application. Industry expert Dick Caro walks you through the various industrial networks (*e.g.,* sensor, fieldbus, control, safety buses, etc.) and then gives you the perspective on the typical applications for industrial automation network technology. The emphasis is on the intended application for each network, rather than on the network protocol that is more typically discussed in most textbooks.