This comprehensive book is the only one that addresses theory, practice, management, purchasing and marketing of cooling water systems in one volume.

The approach of this essential reference is practical and international, and it is based on 30 years of professional experience.

Profusely illustrated, this handbook will enable professionals to understand the factors that may interfere and compromise the optimal functioning of cooling water systems, used in every industrial and commercial premise in the world (e.g., industrial plants, large office towers; hospitals, hotels, etc.).

Maintenance of cooling water systems is based on specialty chemicals, and this invaluable handbook contains information on chemical formulations and programming, considered “taboo” and never published before.

Scaling, corrosion, micro-biological deposits, among others, interfere with the transfer of heat, a key element to achieve a cost-effective operation of cooling water systems, examined in chapters on Cooling System & Heat Exchange Essentials; Make-Up Water Sources & Their Impurities; and Corrosion, Fouling & Deposition.

Different treatments, pre-treatment equipment, devices; application of different chemicals; and computer software programs are analyzed in the chapters on Chemical Treatments & Programs for Cooling Water Systems; and Microbiological Control Programs.

Specially important to decision-makers, water treatment field personnel, and cooling water systems marketing personnel are the chapters on Buying and Selling Cooling Water Programs; Surveys, Inspections and Cooling Water Program Selection.

The chapters on Managing Cooling Systems and Monitoring and Control, address the importance of improving and maintaining the quality of the cooling water systems process and of optimizing operating costs.

An indispensable source for: Chemical, Plant, Maintenance, Operations, Process and Utility Services Engineers; specialty chemicals companies personnel and cooling water systems marketing personnel.
CONTENTS: Cooling System & Heat Exchange Essentials; Make-up Water Sources & their Impurities; Make-up Water Pre-Treatment Processes; Corrosion, Fouling & Deposition; Chemical Treatments & Programs for Cooling Water; Micro-biological Control Programs; Buying and Selling Cooling Water Programs; Surveys, Inspections & Cooling Water Program Selection; Managing Cooling Water Programs; Monitoring & Control; Appendix 1: Useful Data; Appendix 2. Glossary of Terms; Appendix 3. Summary of Charts & Notes for Field Use; References; Index.

BOILER WATER TREATMENT: PRINCIPLES AND PRACTICE
COLIN FRAYNE
pages, 400 (Vol 1), 548 (Vol 2)
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Accurate chemical water treatment and skillful maintenance are key elements to attain optimal boiler operation. Boiler Water Treatment: Principles and Practice analyzes the fundamentals of the mechanical operation of boilers, together with the applied chemistry required to achieve waterside cleanliness and cost-effective and optimal boiler operation.

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Useful Data
Glossary of Terms
Summary of Charts and Notes for Field Use

CHEMICAL ANALYSIS OF INDUSTRIAL WATER
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PARTIAL CONTENTS; Chemical Principles of Water Treatment-The Objectives in Treating Feed Water for Boilers; The Objectives in Treating Water Used for Cooling; The Analysis of Industrial Waters-Mineral Content; Dissolved Gases; Interpretation of Water Analysis, Special Procedures Related to Water Treatment- The Analysis of Foul Waters and Alkaline Sulfide Solutions; Chemical Cleaning of Process Equipment; Evaluation of Cation Exchange Resins,; Chemical Analysis of Scales, Sludges, and Deposits -Preliminary Treatment of Laboratory Samples; Systematic Analysis of Deposits of the Metallic Elements; Systematic Analysis of Water Formed Deposits; Special Procedures forDeposit Analysis; Interpretation of Analytical Results.

THE CHEMICAL TREATMENT OF BOILER WATER
JAMES W. McCOY
308 pages, Illustrations
Paperback
$ 75.00
£ 45.00

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CONTENTS: Principles of Steam Generation; Objectives in Treating Water for Boilers; Physical methods for Improving Water Quality; External Chemical Treatments; Internal Chemical Treatments; Operating Procedures; Complications in the Operation of Boilers: Analytical Methods; Appendix.
THE CHEMICAL TREATMENT OF COOLING WATER
2nd Edition
JAMES W. McCoy
312 pages, illustrations
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$ 105.00
£ 63.00
ISBN 0-8206-0298-1

This standard reference serves the industrial community as an authoritative source on cooling water problems. The problems of corrosion measurement and control are intensively examined and the more recently developed cooling water additives are reviewed. Advances in treatment chemicals and chemical cleaning are thoroughly explored:

PARTIAL CONTENTS: Principles of Open Recirculating Water Systems; Corrosions; Scaling and Fouling; Microbiology; Chemical Treatments; Operating Procedures; Analytical Methods.

THE MICROBIOLOGY OF COOLING WATER
JAMES W. McCoy
272 pages, Illustrations
Hardcover
$ 95.00
£ 57.00
ISBN 0-8206-0253-1

McCoy’s guide to the maintenance and management of cooling water systems and the bacteria that live in them. Includes studies and testing of microbicides and other microorganisms that infest re-circulating cooling water systems and factors influencing their health and growth. Tests biological oxidation processes as a way of reusing treated effluents as an important method of water conservation in the petroleum refining and chemical processing industries. Explores practical methods for controlling microorganisms in cooling water; including working with chlorine dioxide as a microbicide. Methods are given for identifying and evaluating toxicants and bacteria that lead to fouling and staining of cooling water systems.

PARTIAL CONTENTS: Classification and Structure of Most Common Microorganisms; Effects of Microorganisms; Control of Microorganisms; Application of Microbicides; Reclaimed Water; Methods of Analysis.
COOLING TOWER PERFORMANCE
DONALD R. BAKER
452 pages, Illustrations
Hardcover
$ 90.00
£ 55.00
ISBN 0-8206-0300-7

Begins with a brief review of the origins and early history of cooling towers and finally brings together the variety of terms in the industry into a uniform system of terminology. Facts accumulated as a result of laboratory testing together with full-scale tests in the field provide the basis for the methods described in the book. Provides easy to use combination of steps in which to incorporate the Merkel theory. English-American units of measure are used in the examples with metric equivalents shown in parentheses. Appendices contain tables of appropriate constants and conversion factors for use with SI (le Systeme International d’Unites). This guide is of great benefit to cooling tower users, operators and plant designers.

CONTENTS: Historical background of cooling towers; Development of cooling tower theory; Merkel and Enthalpy Potential; Lists laboratory testing facilities and test procedures; Field Testing; Tower Selection and Rating Tables; Tower Units and Universal Rating Charts; General Operating Principles; Hyperbolic Towers;

Nomenclature and definitions; Psychrometric Tables and Chart; Skeleton Tables for Calculating Goff Formulations; Bibliography; Index.

FIREWORKS TECHNOLOGY

FIREWORKS, PRINCIPLES AND PRACTICE, 4TH Edition
RON LANCASTER, MBE
548 pages, Illustrations
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The thoroughly revised and updated 4th edition of the one essential reference source regarded as “the Bible of Fireworks”.
All the chapters from the previous edition have been revised and enlarged to include in most cases new fireworks formats. Four new chapters have been added to this 3rd Edition:

In a new chapter Chemistry of Fireworks Compositions; Dr. Takeo Shimizu examines the use of materials and binders in the manufacturing process and how to control reactions.

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GEORGE W. WEINGART
260 pages, Illustrations
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Here is a classic in the field, an enormously successful handbook on the art of making fireworks. In non-technical language, it gives formulas and detailed instructions for all the time-honored favorites, exhibition and display pieces. An indispensable book for both the beginner and the professional pyrotechnist.

PARTIAL CONTENTS: Ingredients; Manipulation; Tools and Appliances Used; Articles of Manufacture and Formulas; Exhibition Fireworks; Miscellaneous; Appendix; Glossary; Bibliography.

MILITARY AND CIVILIAN PYROTECHNICS
HERBERT ELLERN
480 pages
Paperback
$ 65.00
£ 40.00

Written for manufacturers, laboratory pyrotechnicians, and lay students, this book contains an enormous amount of invaluable data on the properties and production of pyrotechnic materials, on heat and light production, on aerosols, energy, and noise. Includes a manufacturing formulary, and a good reference section. Its wealth of information and highly readable style make it a ‘must have’ in every pyrotechnician’s library.
This handbook provides extremely useful data and information about theory and industrial applications that formerly were limited to applications in military ordnance, fireworks, and rock blasting. These “civilian” applications include spacecraft, aircraft, underwater vehicle systems, metal forming, cladding, riveting and some other production methods. Twenty-one chapters contained in six parts: Explosive Materials, Explosive-Actuated Devices, Pyrotechnic Systems, Reliability and Testing, Explosive Production Methods and Appendix. Contains numerous charts, graphs and illustrations as useful aids.

Harry’s Cosmeticology, one of the most popular cosmetic technical books of all time, has been updated by Dr. Martin M. Rieger, together with an international team of experts in different areas of the cosmetic science.

The 8th Edition of this book, regarded as an essential reference for cosmetic chemists, cosmetic dermatologists and plastic surgeons, is structured to provide a
overall understanding of the most current formulation and production processes in the cosmetic industry. The chapters on skin, hair and nails anatomy and physiology provide the foundations for cosmetic formulation approaches and methods analyzed in the chapters on Special Ingredients, Processes, Formulation, Performance and Production.

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The Mouth

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SECTION V. PRODUCTION
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H. BENNETT
316 pages
Hardcover
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£ 63.00
ISBN 0-8206-0340-6

By popular demand the world-renowned
Harry Bennett just before his death,
compiled a new collection of cosmetic
preparations. A valuable source for the
industrial chemists looking to develop
new products or for self-starters looking
to start their own business.

CONTENTS: Hair Products; Bath
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and eye make-up; Creams and lotions;
Mouth preparations; Perfumes; Colognes
and powders; Shaving preparations;
Sunscreen products; Baby preparations;
Base formulas.

HANDBOOK OF PERFUMES AND FLAVORS
DR. OLINDO SECONDTINI
492 pages, illustrations
Hardcover
$ 185.00
£ 111.00
ISBN 0-8206-0334-1

This unique, comprehensive source book
provides a thorough guide to the
compounding of basic floral perfumes for
cosmetics, soaps, disinfectants,
 deodorants, and flavors for food.
Regardless of scientific and technical
education or experience in this field, this
book will assist those involved in
compounding perfume and flavor for all
aspects of their application in the
chemical industry.

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Aromatic Chemicals; Basic Flavoring
Material; Perfumes; Solvents for Flavors
and Perfumes; Coloring Material for
Flavors and Perfumes; Formulary of
Flavors and Perfumes.
CEMENT MANUFACTURER’S HANDBOOK
KURT E. PERAY
408 pages
Paperback
$ 75.00
£ 45.00
ISBN 0-8206-0368-6

This unique handbook contains the most essential engineering formulas used in the cement manufacturing process. All formulas are presented in both English and metric systems of units. Examples are given to familiarize the reader with the usefulness of these formulas. The book can be used as a text manual for courses in cement technology, and as a reference for solving operating problems. The book is equally valuable for the manager, supervisor, chemist, and operator as it is to the cement plant engineer.

CONTENTS: Cement Chemistry and Quality Control; Kiln Feed Mix Calculations; Chemical and Physical Properties of Materials; Technical Investigations of Kiln Performance; Heat Balance; Sulfur and Alkali Balance in Rotary Kilns; Chain Systems Designs; Cooler Air Balance Technical Investigation of Grinding Circuits; Ball Charges; Grinding Aid Solutions; Useful Formulas in Stearn Engineering Electrical Engineering; Fan Engineering; Fluid Flow; Physical Chemistry; Heat Transfer and Dust Collection; Fundamental Formulas in Algebra; Trigonometry; Statistics; Finances; Safety and Geometry; Conversion Factors for all Units.

THE ROTARY CEMENT KILN
2nd Edition
KURT E. PERAY
396 pages, Illustrations
Paperback
$ 80.00
£ 48.00
ISBN 0-8206-0367-8

This is an indispensable reference source and training tool not only for kiln operators, but for supervisors and management staff as well. Extensive discussions on pre-heater and pre-calciner operations are included. The appendix includes a section with conversion tables, definitions of common terms relating to rotary kilns, and a suggested outline for a training program for new operators.

CONTENTS: History; Types of Rotary Kilns; Refractories; Fuels; Combustion;
The Flame; Heat Transfer; Heat Balances; The Chemistry of Kiln Feed and Clinker, Reaction Zones in the Rotary Kiln; Coating and Ring Formation in a Rotary Kiln; The Air Circuit in a Rotary Kiln: Movement of the Material Through The Kiln; Kiln Operating and Control Methods; Instrumentation; Burning Zone Control; Fuel Systems; Clinker cooler Control; Kiln Exit-Gas Temperature Control; Feed-Rate Control; Kiln Starts and Shutdowns; The 27 Basic Kiln Conditions; Kiln Emergency Conditions; Safety and Accident Prevention; Appendix: A KILN OPERATOR’S QUIZ; Glossary; Conversion Tables; Index.

F.M. LEA
740 pages, Illustrations
Hardcover
$ 115.00
£ 69.00

F.M. LEA’S last living edition. The advances in the chemistry and physics of cements led to the necessity for this third edition. Lea’s book deals with the chemical and physical properties of cements and concretes and their relation to the practical problems that arise in their manufacture and use. It will be of great interest not only to the chemist involved in the science and technology of silicate materials but also to those using concrete in building and civil engineering construction. Attention is given to problems arising in the use of concrete, from the suitability of materials, to the conditions under which concrete may deteriorate and the precautionary or remedial measures that can be adopted. It is well illustrated with line drawings, tables and photographs.

PARTIAL CONTENTS: History of calcareous cements; Classification of cements; Portland cements: Raw materials and manufacturing processes; Cement components and their phase relations; Cementing qualities of the cement compounds; Constitution, burning, proportioning, hydration and setting and hardening of Portland cement; Structure of cement compounds; Action of acid and sulphate waters of Portland Cement; Physical and mechanical properties of Portland Cement, Pozzolanas and Pozzolanic cements; Cements made from blast furnace slag; High Alumina cement, some special cements and cement properties; Concrete aggregates; Resistance of Concrete to various organic and inorganic agents; Examination of concrete failures.
There is hardly any technical library in the world in which the volumes of the Chemical Formulary (Volumes 1-34) do not occupy a prominent place. Chemists both experienced and beginner, continually refer to them. Volume 34 counts numerous experts among its contributors, such as Editor-in-chief H. Bennett. It does not duplicate any of the formulas included in previous volumes, but lists a wide array of modern and salable products from all branches of the chemical industries. An excellent reference for formulation problems.

Like Volume 34, Volume 33 counts numerous experts among its contributors, such as Editor-in-chief H. Bennett. It does not duplicate any of the formulas included in previous volumes, but lists a wide array of modern and salable products from all branches of the chemical industries. An excellent reference for formulation problems.
Here is a teaching aid as well as a practical guide for soil analysts; It is the result of twenty years of experience and study and analysis of soils; It is equally useful to the undergraduate, post-graduate student of soil sciences as well as for the research professional in the soil laboratory;

PARTIAL CONTENTS: Introduction; Preparation of Soil Samples for Analysis; Soil Reaction (pH value) and Lime Potential; Titrateable Acidity; Exchangeable Hydrogen and Lime Requirement; Insoluble Carbonates and Sulfur Requirement; Soluble Salts; Cation and Anion Exchange Properties; Calcium and Magnesium; Potassium and Sodium; Nitrogen; Carbon and Organic Matter, Phosphorus, Sulfur, Iron, Aluminum and Manganese; Silicon, Titanium and Sesquioxides (elemental) Analysis and Some Trace elements; Oxidation-Reduction Potentials; Waterlogged Soils; Appendices; References; Index.

This reference source provides an unparalleled range of coverage for important industrial chemicals. Each entry provides the generic chemical name of the product, its synonyms, all its trade names equivalents, and important applications and properties. The variations between trademarks are cited and extensive cross-referencing allows the user to easily locate the exact product that is needed for specific applications, and where to get it.
Every chemical research project begins with a thorough and expedient search of the chemical literature.

As the size and complexity of the chemical literature continues to grow at an outstanding rate, the chemist is continuously confronted with the task of wading through a mountain of information, that may elude even the most versed computer searcher.

The LIBRARY HANDBOOK FOR ORGANIC CHEMISTS is designed to direct the researcher to the most appropriate references and to streamline, organize and optimize the process of searching the chemical literature.

While directing the researcher to all appropriate literature resources, this handbook also provides a thorough understanding of the organization of the information contained.

As each section is designed for quick assimilation of the information necessary to locate a reference, researchers do not have to read the entire book or even a complete section to understand and search the chemical literature.

This handbook leads the infrequent searcher stepwise through the literature to the answer to a search. For those conducting computer searches, it will help in selecting the appropriate database and it will also aid in searching commands. As for the experienced librarian, this handbook will become the source to check in order to ensure that all the basis have been covered.

CONTENTS:

Search Orientation Table. Primary Sources: Aldrich Catalog/Handbook of Fine Chemicals; Annual Reports in Organic Synthesis; Beilstein; Hadbuch der Organischen Chemie; Chemical Abstracts; Chemist’s Companion; Compendium of Organic Synthetic Methods; Comprehensive Organic Chemistry; Comprehensive Organometallic Chemistry; Comprehensive Organic Functional Group Transformations; CRC Handbook of Chemistry and Physics; Dictionary of Organometallic Compounds; Dictionary of Organic Compounds; Dissertations; Encyclopedia; of Reagents for Organic Synthesis; Fieser’s Reagents for Organic Synthesis; Formation of C-C Bonds; Houben-Weyl Methoden der Organischen Chemie; Internet; Kirk-Othmer Encyclopedia of Chemical technology; Lange’s Handbook of Chemistry; Larock’s Comprehensive Organic Transformations; Literature; Merck’s Indexes; Organic Reactions; Organic Synthesis; Patai’s Chemistry of Functional Groups Series; Patents; Purchasing Chemicals; Rod’s Chemistry of Carbon Compounds; Science Citation Index; Scientific Dictionaries; Theilheimer’s Synthetic Methods of Organic Chemistry; Translations. Reviews.
HANDBOOK OF POWDER METALLURGY
Henry H. Hausner
616 pages
Hardcover
$ 99.00
£ 60.00
ISBN 0-8206-0219-1

Hausner’s handbook covers the entire field of powder metallurgy with its various branches and refinements, while at the same time remaining within the bounds of manageable size and readability. It is a concise presentation concentrating on graphical presentations and tables to explain basic relationships between the principles and technology of powder metallurgy. This book is a valuable guide not only for students and teachers but also for the practical powder metallurgists involved in research, development and production of P/M parts and compounds.

CONTENTS: Principles of; Powder Mixing; Sintering of Metal Powders; Alloy Formation by Powder Metallurgy; Hot Pressing; Powder Metallurgy of Iron and Iron Alloys, Copper and Copper Alloys, Light Metals and Refractory Metals; Electrical Applications; Porous Metals.

A FORMULARY OF PAINTS AND OTHER COATINGS
Ed. M & I ASH
436 pages
Paperback
$ 65.00
£ 39.00
ISBN 0-8206-0348-1

This book of formulas is a tool for anyone who must turn out quality paints without finance to develop and test completely new, untested prototypes. Most of the formulas are starting point preparations that do require refining. The chapters are built on: Use (primer, enamel, ext./int. paint, luminescent, etc.) Special Characteristics, Vehicle (oil, alkaloid, epoxy, etc.) and Color.
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PARTIAL CONTENTS: Hot-Melt Adhesives; Pressure-Sensitive Adhesives; Construction Adhesives; Laminating Adhesives; Furniture and Appliance Adhesives; Foam Rubber Adhesives; Wood and Plastic Assembly Adhesives; Newspaper and Printing Adhesives; Sealants; Binders; Caulks.

A FORMULARY OF DETERGENTS AND OTHER CLEANING AGENTS
Ed. M & I ASH
360 pages
Paperback
$ 65.00
£ 39.00
ISBN: 0-8206-0369-4

This is a collection of formulas devoted entirely to products that serve as cleaning agents for personal hygiene, household uses, and industrial maintenance. All formulas are systematically presented first by application and then classified by their chemical constituents. The formulas include instructions for preparation. Because of the broad spectrum of cleaning agents included in the book it will be valuable to both the industrial and home chemists with formulas geared to the professional and the hobbyist.

PARTIAL CONTENTS: Hygienic Cleansers; Solvent Cleaners; Industrial Floor Cleaners; General Industrial Cleaners and Detergents; Household Cleaners; Dry Cleaning Agents; Miscellaneous.
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HERBERT HERKIMER
592 pages, Illustrations
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This invaluable guide contains over 8,000 illustrations of machine elements and assembled machinery for the engineer, designer, draftsman and manufacturer.

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236 pages
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JAMES L. EVERETT
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Ed. HENRY GOLDSCHMIEDT
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HANDBOOK OF LABORATORY SOLUTIONS
M.H. GABB, W.E. LATCHAM
128 pages
Paperback
$ 55.00
£ 33.00
ISBN 0-8206-0365-1

A concise and handy guide to the numerous “recipes” for chemical solutions used in laboratories. In each chapter, preparations of one particular use, or related uses, are grouped alphabetically. Where appropriate, the use of the solutions are stated and cross reference made. Should meet most of the everyday requirements of chemistry, physics, biology and engineering laboratories.

CONTENTS: Solutions-Basic Definitions; Solutions-Handling Techniques; Solutions for Titrations; Bench Solutions; Indicators; Organic Reagents; Solutions in Histology; Physiological Salines and Culture Solutions; Miscellaneous Solutions.
POLYMER TECHNOLOGY, 3rd Edition
D.C. MILES, J.H. BRISTON
728 pages, Illustrations
Hardcover
$ 171.00
£ 103.00

The many advances in polymers and their associated processes have rendered necessary this new edition from Mr Miles and Mr Briston- two very renowned and respected British authors. Polymer and Material Scientists in industrial, academic and government laboratories, as well as researchers and managers who need to keep abreast of developments in Polymer Technology will find this an invaluable practical reference source: New additions include sections on Stretch Blow Molding, Multi-layer (Coextrusion), Bottle Blowing, and Decoration of Plastics, with a new chapter on Thermoplastic Polyesters. The MATERIAL Chapters (Thermosets and Thermoplastics, Natural Polymers and Derivatives; Rubberlike Polymers, Inorganic Polymers, Compounding Ingredients), were updated to include linear low density polyethylene (LLDPE), pearlescent polypropylene, amorphousnylons (Sela PA), poly (ethylene terephthalate) (PET), ethylene/vinyl alcohol copolymers (EVOH), poly (etherimide) (Ultem), and poly (etheretherketone) (PEEK). The updated chapters on PROCESSING (Compression and Transfer Molding, Extrusion, Injection Molding and Blow Molding, Thermoforming, Powder Coating, Miscellaneous Processing Techniques) take account of developments in Powder Coating, Coextrusion, Injection and Blow Molding, Solid Phase Pressure Forming, and Thermoforming (including blister and skin packaging). The TESTING Chapter (Physical and Chemical Testing of Plastics) as well as the APPLICATION aspects are updated and expanded to include Water Vapor. The section on Optical Tests has also been updated and enlarged.

INDUSTRIAL CHEMICAL CLEANING
JAMES W. McCOY
296 pages, Illustrations
Hardcover
$ 105.00
£ 63.00
ISBN 0-8206-0305-8

Here is a lucid, practical presentation of the problems and solutions to industrial chemical cleaning. Contained in one essential reference are the causes and composition of fouling, the various chemicals used for its control, hazards in cleaning, and an examination of cleaning methods for the most common industrial equipment. Finally, a complete section on
the chemical analysis of the deposits with procedures for determining the most effective cleaning solutions is included. This book will serve as the main reference tool for the industrial engineer who manages equipment cleaning operations and the consultant who is called in to do the job.

CONTENTS: Principles of Chemical Cleaning; Chemicals Used in Industrial Cleaning; Nonaqueous Cleaning Solvents; Nonchemical Cleaning Procedures; Passivation; Planning and Contracting; Steam Generators; Water-Cooled Heat Exchangers; Columns, Reactors, and Other Vertical Vessels; Furnace Tubes; Analytical Procedures; Appendices.

PURIFICATION WITH ACTIVATED CARBON: INDUSTRIAL, COMMERCIAL ENVIRONMENTAL
J. H. HASSLER
404 pages
Paperback
$ 65.00
£ 39.00

Written by a pioneers who developed the original process to manufacture carbon in the United States, this book is considered essential reading for professionals involved in the removal from air or water by using the most important single pollution control product ever invented. The emphasis is on the technical applications. The implications of some of the concepts discussed in this book are now being fully exploited by new activated carbon products and technologies.

PARTICULATE SCIENCE AND TECHNOLOGY
JOHN K. BEDDOW
740 pages, Illustrations
Hardcover
$ 90.00
£ 55.00
ISBN 8206-0254-X

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