

PDF CHEMICAL STABILITY OF PHARMACEUTICALS A HANDBOOK FOR PHARMACISTS

Chemical Stability of Pharmaceuticals

Provides a sound theoretical basis for understanding chemical kinetics and its uses in studying drug stability. Treats the calculations, approximations, and estimates that are useful to the pharmacist in professional practice, and presents a collection of selected drug-stability data from the pharmaceutical literature. This Handbook makes accessible to the pharmacist much of the information necessary to make pharmaceutical decisions about drug stability. Changes in this edition include thorough revision of the chapter on oxidation, addition of a new chapter on solid-state stability, and a tripling of the number of stability monographs. All monographs figures have been redrawn, most of them from published data, and all sources are cited.

Drug Stability and Chemical Kinetics

This book comprehensively reviews drug stability and chemical kinetics: how external factors can influence the stability of drugs, and the reaction rates that trigger these effects. Explaining the important theoretical concepts of drug stability and chemical kinetics, and providing numerous examples in the form of illustrations, tables and calculations, the book helps readers gain a better understanding of the rates of reactions, order of reactions, types of degradation and how to prevent it, as well as types of stability studies. It also offers insights into the importance of the rate at which the drug is degraded and/or decomposed under various external and internal conditions, including temperature, pH, humidity and light. This book is intended for researchers, PhD students and scientists working in the field of pharmacy, pharmacology, pharmaceutical chemistry, medicinal chemistry and biopharmaceutics.

Drug Stability for Pharmaceutical Scientists

Drug Stability for Pharmaceutical Scientists is a clear and easy-to-follow guide on drug degradation in pharmaceutical formulation. This book features valuable content on both aqueous and solid drug solutions, the stability of proteins and peptides, acid-base catalyzed and solvent catalyzed reactions, how drug formulation can influence drug stability, the influence of external factors on reaction rates and much more. Full of examples of real-life formulation problems and step-by-step calculations, this book is the ideal resource for graduate students, as well as scientists in the pharmaceutical and related industries. Illustrates important theoretical concepts with numerous examples, figures, calculations, learning problems and questions for self-study and retention of material Provides answers and explanations to test your knowledge Enables you to better understand key concepts such as rate and order of reaction, reaction equilibrium, complex reaction mechanisms and more Includes an in-depth discussion of both aqueous and solid drug solutions and contains the latest international regulatory requirements on drug stability

Stability of Drugs and Dosage Forms

Drug products are complex mixtures of drugs and excipients and, as such, their chemical and physical stability kinetics are complex. This book discusses the stability of these dosage forms with preformulation studies through to the studies on the final products. The book is intended for graduate students, researchers

and professionals in the field of Pharmaceutics and Pharmaceutical Chemistry.

Handbook of Stability Testing in Pharmaceutical Development

This handbook is the first to cover all aspects of stability testing in pharmaceutical development. Written by a group of international experts, the book presents a scientific understanding of regulations and balances methodologies and best practices.

Pharmaceutical Manufacturing Handbook

This handbook features contributions from a team of expert authors representing the many disciplines within science, engineering, and technology that are involved in pharmaceutical manufacturing. They provide the information and tools you need to design, implement, operate, and troubleshoot a pharmaceutical manufacturing system. The editor, with more than thirty years' experience working with pharmaceutical and biotechnology companies, carefully reviewed all the chapters to ensure that each one is thorough, accurate, and clear.

Essentials of Pharmaceutical Chemistry

An introduction to pharmaceutical chemistry for undergraduate pharmacy, chemistry and medicinal chemistry students. Essentials of Pharmaceutical Chemistry is a chemistry introduction that covers all of the core material necessary to provide an understanding of the basic chemistry of drug molecules. Now a core text on many university courses, it contains numerous worked examples and problems

Pharmaceutical Manufacturing Handbook

With its coverage of Food and Drug Administration regulations, international regulations, good manufacturing practices, and process analytical technology, this handbook offers complete coverage of the regulations and quality control issues that govern pharmaceutical manufacturing. In addition, the book discusses quality assurance and validation, drug stability, and contamination control, all key aspects of pharmaceutical manufacturing that are heavily influenced by regulatory guidelines. The team of expert authors offer you advice based on their own firsthand experience in all phases of pharmaceutical manufacturing.

Pharmaceutical Analysis E-Book

An introductory text, written with the needs of the student in mind, which explains all the most important techniques used in the analysis of pharmaceuticals - a key procedure in ensuring the quality of drugs . The text is enhanced throughout with keypoints and self-assessment boxes, to aid student learning. Features Includes worked calculations to demonstrate mathematics in use for pharmaceutical analysis. Focuses on key points rather than a large number of facts to help readers really understand the field as well as pass exams. Includes self-assessment, focussing on simple arithmetical calculation results from analytical data. Additional section on basic calculations in pharmaceutical analysis More detail on the capillary electrophoresis of proteins A discussion of some of the new types of HPLC column and on solvent selectivity in HPLC Additional material inserted on the control of the quality of analytical methods, mass spectrometry and high pressure liquid chromatography Additional self-assessment exercises

Handbook of Pharmaceutical Manufacturing Formulations, Third Edition

The Handbook of Pharmaceutical Manufacturing Formulations, Third Edition: Volume Four, Semisolid Products is an authoritative and practical guide to the art and science of formulating drugs for commercial

manufacturing. With thoroughly revised and expanded content, this fourth volume of a six-volume set, compiles data from FDA and EMA new drug applications, patents and patent applications, and other sources of generic and proprietary formulations including author's own experience, to cover the broad spectrum of cGMP formulations and issues in using these formulations in a commercial setting. A must-have collection for pharmaceutical manufacturers, educational institutions, and regulatory authorities, this is an excellent platform for drug companies to benchmark their products and for generic companies to formulate drugs coming off patent. Features: ? Largest source of authoritative and practical formulations, cGMP compliance guidance and self-audit suggestions ? Differs from other publications on formulation science in that it focuses on readily scalable commercial formulations that can be adopted for cGMP manufacturing ? Tackles common difficulties in formulating drugs and presents details on stability testing, bioequivalence testing, and full compliance with drug product safety elements ? Written by a well-recognized authority on drug and dosage form development including biological drugs and alternative medicines

Bentley's Textbook of Pharmaceutics - E-Book

This adaptation of Bentley's Textbook of Pharmaceutics follows the same goals as those of the previous edition, albeit in a new look. The content of the old edition has been updated and expanded and several new chapters, viz. Complexations, Stability Testing as per ICH Guidelines, Parenteral Formulations, New Drug Delivery Systems and Pilot Plant Manufacturing, have been included, with an intention to make the book more informative for the modern pharmacists. The book has six sections: Section I deals with the physicochemical principles. Two new chapters: Complexations and ICH Guidelines for Stability Testing, have been added to make it more informative. Section II conveys the information regarding pharmaceutical unit operations and processes. Section III describes the area of pharmaceutical practice. Extensive recent updates have been included in many chapters of this section. Two new chapters: Parenteral Formulations and New Drug Delivery Systems, have been added. Section IV contains radioactivity principles and applications. Section V deals with microbiology and animal products. Section VI contains the formulation and packaging aspects of pharmaceuticals. Pilot Plant Manufacturing concepts are added as a new chapter, which may be beneficial to readers to understand the art of designing of a plant from the pilot plant model.

Handbook of Extemporaneous Preparation

A comprehensive and easy-to-follow guide to good practice in extemporaneous compounding.

Handbook of Pharmaceutical Manufacturing Formulations, Third Edition

The Handbook of Pharmaceutical Manufacturing Formulations, Third Edition: Volume One, Compressed Solid Products is an authoritative and practical guide to the art and science of formulating drugs for commercial manufacturing. With thoroughly revised and expanded content, this first volume of a six-volume set, compiles data from FDA new drug applications, patent applications, and other sources of generic and proprietary formulations to cover the broad spectrum of GMP formulations and issues in using these formulations in a commercial setting. A must-have collection for pharmaceutical manufacturers, educational institutions, and regulatory authorities, this is an excellent platform for drug companies to benchmark their products and for generic companies to formulate drugs coming off patent.

Handbook of Preformulation

Preformulation studies are the physical, chemical, and biological studies needed to characterize a drug substance for enabling the proper design of a drug product, whereas the effectiveness of a drug product is determined during the formulation studies phase. Though the two disciplines overlap in practice, each is a significantly distinct phase of

Handbook of Pharmaceutical Manufacturing Formulations, Third Edition

The Handbook of Pharmaceutical Manufacturing Formulations, Third Edition: Volume Two, Uncompressed Solid Products is an authoritative and practical guide to the art and science of formulating drugs for commercial manufacturing. With thoroughly revised and expanded content, this second volume of a six-volume set, compiles data from FDA and EMA new drug applications, patents and patent applications, and other sources of generic and proprietary formulations including author's own experience, to cover the broad spectrum of cGMP formulations and issues in using these formulations in a commercial setting. A must-have collection for pharmaceutical manufacturers, educational institutions, and regulatory authorities, this is an excellent platform for drug companies to benchmark their products and for generic companies to formulate drugs coming off patent. Features: ? Largest source of authoritative and practical formulations, cGMP compliance guidance and self-audit suggestions ? Differs from other publications on formulation science in that it focuses on readily scalable commercial formulations that can be adopted for cGMP manufacturing ? Tackles common difficulties in formulating drugs and presents details on stability testing, bioequivalence testing, and full compliance with drug product safety elements ? Written by a well-recognized authority on drug and dosage form development including biological drugs and alternative medicines

Handbook of Pharmaceutical Excipients

Describes the chemical and physical properties of pharmaceutical excipients. Each monograph contains nonproprietary names, synonyms, chemical name and CAS registry number, empirical formula and molecular weight, structural formula, functional category, applications in pharmaceutical formulation or technology, description, pharmacopeial specifications, typical properties, stability and storage conditions, incompatibilities, method of manufacture, safety, handling precautions, regulatory status, pharmacopeias, related substances, comments, specific references, general references, and authors.

Handbook of Pharmaceutical Manufacturing Formulations, Third Edition

The Handbook of Pharmaceutical Manufacturing Formulations, Third Edition: Volume Three, Liquid Products is an authoritative and practical guide to the art and science of formulating drugs for commercial manufacturing. With thoroughly revised and expanded content, this third volume of a six-volume set, compiles data from FDA and EMA new drug applications, patents and patent applications, and other sources of generic and proprietary formulations including author's own experience, to cover the broad spectrum of cGMP formulations and issues in using these formulations in a commercial setting. A must-have collection for pharmaceutical manufacturers, educational institutions, and regulatory authorities, this is an excellent platform for drug companies to benchmark their products and for generic companies to formulate drugs coming off patent. Features: ? Largest source of authoritative and practical formulations, cGMP compliance guidance and self-audit suggestions ? Differs from other publications on formulation science in that it focuses on readily scalable commercial formulations that can be adopted for cGMP manufacturing ? Tackles common difficulties in formulating drugs and presents details on stability testing, bioequivalence testing, and full compliance with drug product safety elements ? Written by a well-recognized authority on drug and dosage form development including biological drugs and alternative medicines

Handbook of Pharmaceutical Manufacturing Formulations, Third Edition

The Handbook of Pharmaceutical Manufacturing Formulations, Third Edition: Volume Six, Sterile Products is an authoritative and practical guide to the art and science of formulating drugs for commercial manufacturing. With thoroughly revised and expanded content, this sixth volume of a six-volume set, compiles data from FDA and EMA new drug applications, patents and patent applications, and other sources of generic and proprietary formulations including author's own experience, to cover the broad spectrum of cGMP formulations and issues in using these formulations in a commercial setting. A must-have collection for pharmaceutical manufacturers, educational institutions, and regulatory authorities, this is an excellent

platform for drug companies to benchmark their products and for generic companies to formulate drugs coming off patent. Features: ? Largest source of authoritative and practical formulations, cGMP compliance guidance and self-audit suggestions ? Differs from other publications on formulation science in that it focuses on readily scalable commercial formulations that can be adopted for cGMP manufacturing ? Tackles common difficulties in formulating drugs and presents details on stability testing, bioequivalence testing, and full compliance with drug product safety elements ? Written by a well-recognized authority on drug and dosage form development including biological drugs and alternative medicines

An Introduction to Pharmaceutical Formulation

An Introduction to Pharmaceutical Formulation describes the various forms in which drugs may be supplied to doctors, patients, and veterinary surgeons. An account is given of the materials which may be added to drugs in order to provide formulated products, and of the methods by which formulations are assessed. The book begins with a background on pharmaceutical formulation, describing manufactured and official formulations, important criteria for a formulation, and technical advances in pharmacy during the post-war period. This is followed by separate chapters on diluents, solvents, and liquid vehicles; thickeners and binders; the chemistry and pharmacology of surface-active agents; and colors, flavors, and preservatives. Subsequent chapters cover solid, liquid, and paste formulations; controlled drug release; the stability of formulations; the importance of the container of the formulation; and large-scale manufacturing of formulated products. This book is intended primarily for students of pharmacy. It is not a textbook of practical or theoretical pharmaceutics but should be read in conjunction with other books on these subjects.

Handbook on Injectable Drugs

Drug monograph entries include information on the product, its administration, stability, solution compatibility, additive compatibility, and Y-site injection compatibility.

Handbook of Preformulation

Preformulation studies are the physical, chemical, and biological studies needed to characterize a drug substance for enabling the proper design of a drug product, whereas the effectiveness of a drug product is determined during the formulation studies phase. Though the two disciplines overlap in practice, each is a significantly distinct phase of new drug development. Entirely focused on preformulation principles, this fully revised and updated Handbook of Preformulation: Chemical, Biological, and Botanical Drugs, Second Edition provides detailed descriptions of preformulation methodologies, gives a state-of-the-art description of each technique, and lists the currently available tools useful in providing a comprehensive characterization of a new drug entity. Features: Addresses the preformulation studies of three different types of new active entities - chemical, biological, and botanical, which is the latest established class of active ingredient classified by the FDA Illustrates the activities comprised in preformulation studies and establishes a method of tasking for drug development projects Includes extensive flow charts for characterization decision making Gives extensive theoretical treatment of principles important for testing dissolution, solubility, stability, and solid state characterization Includes over 50% new material

Basic Tests for Drugs

This book provides a step-by-step guide to simple methods for verifying the identity of commonly used pharmaceutical substances and dosage forms. The basic tests described can also be used to detect mislabeled, substandard, or counterfeit products when the labeling or physical attributes give rise to doubt. Intended for use in developing countries, where resources and specialized skills may be scarce, all tests rely on a limited range of easily available reagents and equipment and need not be performed in a fully equipped laboratory or by persons with specialized training in pharmacy or chemistry. The book describes tests for 23 pharmaceutical substances and 58 pharmaceutical dosage forms, most of which are included in the WHO

Model List of Essential Drugs. Basic tests for confirming the identity of four commonly used medicinal plant materials are also included. As stressed in the text, these tests, which merely confirm identity, are intended for use as primary screening tools and may need to be followed, in cases of adverse test results, by a full pharmacopoeial analysis. The book opens with a brief description of the importance of basic tests as one of the many steps needed to ensure a supply of safe and effective drugs. Chapter two describes several collections of more sophisticated tests, including volumetric or spectrophotometric analysis and thin-layer chromatography, that can be useful in the primary screening of imported pharmaceutical substances, and dosage forms. Information on how to obtain and use these guides to tests, which have not been published by WHO is also provided. Against this background, the main part of the book sets out test procedures for verifying the identity of selected pharmaceutical substances, pharmaceutical dosage forms, and medicinal plant materials. The book concludes with a cumulative index of test procedures described here and in the related WHO publications "Basic Tests for Pharmaceutical Substances" and "Basic Tests for Pharmaceutical Dosage Forms".

Basic Physical Pharmacy

Basic Physical Pharmacy provides a thorough yet accessible overview of the principles of physical pharmacy and their application in drug formulation and administration. This definitive guide to physical pharmacy covers all types of pharmaceuticals, from traditional forms and dosages to nanotechnology-based novel dosage design.

Pharmacist's Drug Handbook

A needed resource for pharmaceutical scientists and cosmetic chemists, *Essential Chemistry for Formulators of Semisolid and Liquid Dosages* provides insight into the basic chemistry of mixing different phases and test methods for the stability study of nonsolid formulations. The book covers foundational surface/colloid chemistry, which forms the necessary background for making emulsions, suspensions, solutions, and nano drug delivery systems, and the chemistry of mixing, which is critical for further formulation of drug delivery systems into semisolid (gels, creams, lotions, and ointments) or liquid final dosages. Expanding on these foundational principles, this useful guide explores stability testing methods, such as particle size, rheological/viscosity, microscopy, and chemical, and closes with a valuable discussion of regulatory issues. *Essential Chemistry for Formulators of Semisolid and Liquid Dosages* offers scientists and students the foundation and practical guidance to make and analyze semisolid and liquid formulations. Unique coverage of the underlying chemistry that makes possible stable dosages. Quality content written by experienced experts from the drug development industry. Valuable information for academic and industrial scientists developing topical and liquid dosage formulations for pharmaceutical as well as skin care and cosmetic products.

Comprehensive Mcqs in Physical Pharmacy

The suspension dosage form has long been used for poorly soluble active ingredients for various therapeutic indications. Development of stable suspensions over the shelf life of the drug product continues to be a challenge on many fronts. A good understanding of the fundamentals of disperse systems is essential in the development of a suitable pharmaceutical suspension. The development of a suspension dosage form follows a very complicated path. The selection of the proper excipients (surfactants, viscosity imparting agents etc.) is important. The particle size distribution in the finished drug product dosage form is a critical parameter that significantly impacts the bioavailability and pharmacokinetics of the product. Appropriate analytical methodologies and instruments (chromatographs, viscometers, particle size analyzers, etc.) must be utilized to properly characterize the suspension formulation. The development process continues with a successful scale-up of the manufacturing process. Regulatory agencies around the world require clinical trials to establish the safety and efficacy of the drug product. All of this development work should culminate into a regulatory filing in accordance with the regulatory guidelines. *Pharmaceutical Suspensions, From Formulation Development*

to Manufacturing, in its organization, follows the development approach used widely in the pharmaceutical industry. The primary focus of this book is on the classical disperse system – poorly soluble active pharmaceutical ingredients suspended in a suitable vehicle.

Handbook of Institutional Pharmacy Practice

This 6th edition of the established textbook covers every aspect of drug properties from the design of dosage forms to their delivery by all routes to sites of action in the body.

Essential Chemistry for Formulators of Semisolid and Liquid Dosages

An important resource that puts the focus on understanding and handling of organic crystals in drug development. Since a majority of pharmaceutical solid-state materials are organic crystals, their handling and processing are critical aspects of drug development. *Pharmaceutical Crystals: Science and Engineering* offers an introduction to and thorough coverage of organic crystals, and explores the essential role they play in drug development and manufacturing. Written contributions from leading researchers and practitioners in the field, this vital resource provides the fundamental knowledge and explains the connection between pharmaceutically relevant properties and the structure of a crystal. Comprehensive in scope, the text covers a range of topics including: crystallization, molecular interactions, polymorphism, analytical methods, processing, and chemical stability. The authors clearly show how to find solutions for pharmaceutical form selection and crystallization processes. Designed to be an accessible guide, this book represents a valuable resource for improving the drug development process of small drug molecules. This important text: Includes the most important aspects of solid-state organic chemistry and its role in drug development. Offers solutions for pharmaceutical form selection and crystallization processes. Contains a balance between the scientific fundamental and pharmaceutical applications. Presents coverage of crystallography, molecular interactions, polymorphism, analytical methods, processing, and chemical stability. Written for both practicing pharmaceutical scientists, engineers, and senior undergraduate and graduate students studying pharmaceutical solid-state materials, *Pharmaceutical Crystals: Science and Engineering* is a reference and textbook for understanding, producing, analyzing, and designing organic crystals which is an imperative skill to master for anyone working in the field.

Pharmaceutical Suspensions

This textbook is written as a unified approach to various topics, ranging from drug discovery to manufacturing, techniques and technology, regulation and marketing. The key theme of the book is pharmaceuticals - what every student of pharmaceutical sciences should know: from the active pharmaceutical ingredients to the preparation of various dosage forms along with the relevant chemistry, this book makes pharmaceuticals relevant to undergraduate students of pharmacy and pharmaceutical sciences. This book explains how a particular drug was discovered and then converted from lab-scale to manufacturing scale, to the market. It explains the motivation for drug discovery, the reaction chemistry involved, experimental difficulties, various dosage forms and the reasoning behind them, mechanism of action, quality assurance and role of regulatory agencies. After having a course based on this book, the student will be able to understand: 1) the career prospects in the pharmaceutical industry, 2) the need for interdisciplinary teamwork in science, 3) the techniques and technology involved in making pharmaceuticals starting from bulk drugs, and 4) different dosage forms and critical factors in the development of pharmaceutical formulations in relation to the principles of chemistry. A few blockbuster drugs including atorvastatin, sildanefil, ranitidine, ciprofloxacin, amoxicillin, and the longest serving drugs such as aspirin and paracetamol are discussed in detail. Finally, the book also covers the important current pharmaceutical issues like quality control, safety, counterfeiting and abuse of drugs, and future prospects for pharmaceutical industry. Unified approach explaining drug discovery, bulk drug manufacturing, formulation of dosage forms, with pharmacological and therapeutic actions. Manufacturing processes of representative active pharmaceutical ingredients and their chemistry plus formulation of dosage forms presented in this book are

based on actual industrial processes Covers many aspects relevant to students of the pharmaceutical sciences or newly employed pharmaceutical researchers/employees. It contains summary information about regulatory agencies of different countries

Physicochemical Principles of Pharmacy

This new book, from the editor of the highly successful *Pharmaceutical Analysis*, sets out to define the area of pharmaceutical chemistry as distinct from medicinal chemistry. It focuses less on prototypes of drugs that perhaps never came to market and more on the drugs currently in use. The emphasis in the book is on the physicochemical properties of drug molecules and, in so far as they are known, the way that these properties govern the interaction of the drug with its target. Important physicochemical properties include pKa and partition coefficient and the properties of the structural elements within the drug which provide interactions with the target via a range of intermolecular forces. The last fifteen years has seen a great advance in the knowledge of protein structures and a strong emphasis is given to the interaction of drugs with proteins which shape the majority of drug mechanisms. Features: Focus on intramolecular actions Mechanisms of action richly illustrated Self-assessment included Comprehensive chapters on vitamins and biotechnological products This new book, from the editor of the highly successful *Pharmaceutical Analysis*, sets out to define the area of pharmaceutical chemistry as distinct from medicinal chemistry. It focuses less on prototypes of drugs that perhaps never came to market and more on the drugs currently in use. The emphasis in the book is on the physicochemical properties of drug molecules and, in so far as they are known, the way that these properties govern the interaction of the drug with its target. Important physicochemical properties include pKa and partition coefficient and the properties of the structural elements within the drug which provide interactions with the target via a range of intermolecular forces. The last fifteen years has seen a great advance in the knowledge of protein structures and a strong emphasis is given to the interaction of drugs with proteins which shape the majority of drug mechanisms. Features: Focus on intramolecular actions Mechanisms of action richly illustrated Self-assessment included Comprehensive chapters on vitamins and biotechnological products

Pharmaceutical Crystals

Essentials of Pharmaceutical Preformulation is a study guide which describes the basic principles of pharmaceutical physicochemical characterisation. Successful preformulation requires knowledge of fundamental molecular concepts (solubility, ionisation, partitioning, hygroscopicity and stability) and macroscopic properties (physical form, such as the crystalline and amorphous states, hydrates, solvates and co-crystals and powder properties), familiarity with the techniques used to measure them and appreciation of their effect on product performance, recognising that often there is a position of compromise to be reached between product stability and bioavailability. This text introduces the basic concepts and discusses their wider implication for pharmaceutical development, with reference to many case examples of current drugs and drug products. Special attention is given to the principles and best-practice of the analytical techniques that underpin preformulation (UV spectrophotometry, TLC, DSC, XRPD and HPLC). The material is presented in the typical order that would be followed when developing a medicine and maps onto the indicative pharmacy syllabus of the Royal Pharmaceutical Society of Great Britain Undergraduate-level pharmacy students and R&D / analytical scientists working in the pharmaceutical sector (with or without a pharmaceutical background) will find this text easy to follow with relevant pharmaceutical examples. Essential study guide for pharmacy and pharmaceutical science students Covers the pharmaceutical preformulation components of the Royal Pharmaceutical Society of Great Britain's indicative syllabus Easy to follow text highlighted with relevant pharmaceutical examples Self-assessment assignments in a variety of formats Written by authors with both academic and industrial experience Companion website with further information to maximise learning

An Introduction to Pharmaceutical Sciences

Constantly expanding, ASHP's Handbook on Injectable Drugs, 18th Edition™, is now newly updated with the latest information. With its 37-year track record for covering vast amounts of data with precise, accurate detail, nothing else comes close for compatibility, stability, storage, and preparation of parenteral drugs. The 18th edition provides new monographs, new references (including peer-reviewed literature), additional information, and extensive revisions throughout - empowering you with professional confidence. The new, updated online version is available, as well - and as an app for iOS, and Android. The online program and app feature a multiple drug search function, allowing you to simultaneously check an unlimited number of medications for two-drug combination compatibility. Appended MedWatch safety alerts, wall-chart custom views of compatibility results, instant search capabilities, and other interactive advantages provide exceptional accuracy with easy, intuitive navigation. Packages of the print and online versions, for both single user and institutional purchases, are now available.

Pharmaceutical Chemistry, International Edition E-Book

The field of solid state characterization is central to the pharmaceutical industry, as drug products are, in an overwhelming number of cases, produced as solid materials. Selection of the optimum solid form is a critical aspect of the development of pharmaceutical compounds, due to their ability to exist in more than one form or crystal structure (polymorphism). These polymorphs exhibit different physical properties which can affect their biopharmaceutical properties. This book provides an up-to-date review of the current techniques used to characterize pharmaceutical solids. Ensuring balanced, practical coverage with industrial relevance, it covers a range of key applications in the field. The following topics are included: Physical properties and processes Thermodynamics Intellectual guidance X-ray diffraction Spectroscopy Microscopy Particle sizing Mechanical properties Vapour sorption Thermal analysis & Calorimetry Polymorph prediction Form selection

Essentials of Pharmaceutical Preformulation

In the second edition of Pharmaceutical Dosage Forms and Drug Delivery the authors integrate aspects of physical pharmacy, biopharmaceuticals, drug delivery, and biotechnology, emphasizing the increased attention that the recent spectacular advances in dosage form design and drug delivery, gene therapy, and nanotechnology have brought to the field. Highlights of the Second Edition: Additional author Ajit S. Narang brings an industrial practitioner perspective with increased focus on pharmacy math and statistics, and powders and granules Reorganized into three parts: Introduction, Physicochemical Principles, and Dosage Forms Chapters on pharmaceutical calculations, compounding principles, and powders and granules provide a complete spectrum of application of pharmaceutical principles Expansion of review questions and answers clarifies concepts for students and adds to their grasp of key concepts covered in the chapter Coverage of complexation and protein binding aspects of physical pharmacy includes the basic concepts as well as recent progress in the field Although there are numerous books on the science of pharmaceutics and dosage form design, most cover different areas of the discipline and do not provide an integrated approach to the topics. This book not only provides a singular perspective of the overall field, but it supplies a unified source of information for students, instructors, and professionals.

Handbook of Pharmaceutical Excipients

Handbook on Injectable Drugs

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