

S Serway Chemistry 7th Edition

The Advanced Dairy Chemistry series was first published in four volumes in the 1980s (under the title Developments in Dairy Chemistry) and revised in three volumes in the 1990s and 2000s. The series is the leading reference on dairy chemistry, providing in-depth coverage of milk proteins, lipids, lactose, water and minor constituents. Advanced Dairy Chemistry Volume 2: Lipids, Fourth Edition, is unique in the literature on milk lipids, a broad field that encompasses a diverse range of topics, including synthesis of fatty acids and acylglycerols, compounds associated with the milk fat fraction, analytical aspects, behavior of lipids during processing and their effect on product characteristics, product defects arising from lipolysis and oxidation of lipids, as well as nutritional significance of milk lipids. In the years since the publication of the third edition there have been significant developments in milk lipids and these are reflected in changes to this volume. Most topics included in the third edition are retained in the current edition, which has been updated; in some cases, new authors have given their perspective on certain topics. Chapters on nutritional significance of dairy lipids have been considerably revised. This authoritative work summarizes current knowledge on milk lipids and suggests areas for further work. It will be very valuable to dairy scientists, chemists and others working in dairy research or in the dairy industry.

Each experiment in this manual was selected to match topics in the textbook and includes an introduction, a procedure, a page of pre-lab exercises about the concepts the lab illustrates, and a report form. Some have a scenario that places the experiment in a real-world context. In addition, each experiment has a link to a set of references and helpful online resources.

Carefully crafted to provide a comprehensive overview of the chemistry of water in the environment, Water Chemistry: Green Science and Technology of Nature's Most Renewable Resource examines water issues within the broad framework of sustainability, an issue of increasing importance as the demands of Earth's human population threaten to overwhelm the planet's carrying capacity. Renowned environmental author Stanley Manahan provides more than just basic coverage of the chemistry of water. He relates the science and technology of this amazing substance to areas essential to sustainability science, including environmental and green chemistry, industrial ecology, and green (sustainable) science and technology. The inclusion of a separate chapter that comprehensively covers energy, including renewable and emerging sources, sets this book apart. Manahan explains how the hydrosphere relates to the geosphere, atmosphere, biosphere, and anthrosphere. His approach views Planet Earth as consisting of these five mutually interacting spheres. He covers biogeochemical cycles and the essential role of water in these basic cycles of materials. He also defines environmental chemistry and green chemistry, emphasizing water's role in the practice of each. Manahan highlights the role of the anthrosphere, that part of the environment constructed and operated by humans. He underscores its overwhelming influence on the environment and its pervasive effects on the hydrosphere. He also covers the essential role that water plays in the sustainable operation of the anthrosphere and how it can be maintained in a manner that will enable it to operate in harmony with the environment for generations to come. Written at an intermediate level, this is an appropriate text for the study of current affairs in environmental chemistry. It provides a review and grounding in basic and organic chemistry for those students who need it and also fills a niche for an aquatic chemistry book that relates the hydrosphere to the four other environmental spheres.

Chemical engineers face the challenge of learning the difficult concept and application of entropy and the 2nd Law of Thermodynamics. By following a visual approach and offering qualitative discussions of the role of molecular interactions, Koretsky helps them understand and

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visualize thermodynamics. Highlighted examples show how the material is applied in the real world. Expanded coverage includes biological content and examples, the Equation of State approach for both liquid and vapor phases in VLE, and the practical side of the 2nd Law. Engineers will then be able to use this resource as the basis for more advanced concepts.

The Chemistry of Natural Products: 6 discusses some of the advances in the chemistry of sesquiterpenic lactones. This book presents the studies on terpenoids isolated from Compositae. Organized into 10 chapters, this book begins with an overview of the revised structures of some guaianolides and germacranolides. This text then examines the advances in the field of steroidal alkaloids and sapogenins possessing the C₂₇-carbon skeleton of cholestane. Other chapters consider the usefulness of steroidal glycosides of digitalis as life-saving products. This book discusses as well the microbiological oxidation of the five-membered ether sesquiterpenes guaioxide and liguroxide using *Mucor parasiticus*. The final chapter deals with the application of hypofluorites, particularly trifluoromethyl hypofluorite, in the synthesis of fluorinated steroids. This book is a valuable resource for organic chemists, phytochemists, plant biochemists, botanists, and other scientists. Students and research workers who are interested in the chemistry of natural products will also find this book extremely useful.

This textbook provides essential information for students of inorganic chemistry or for chemists pursuing self-study. The presentation of topics is made with an effort to be clear and concise so that the book is portable and user friendly. Inorganic Chemistry 2E is divided into five major themes (structure, condensed phases, solution chemistry, main group and coordination compounds) with several chapters in each. There is a logical progression from atomic structure to molecular structure to properties of substances based on molecular structures, to behavior of solids, etc. The author emphasizes fundamental principles-including molecular structure, acid-base chemistry, coordination chemistry, ligand field theory, and solid state chemistry -and presents topics in a clear, concise manner. There is a reinforcement of basic principles throughout the book. For example, the hard-soft interaction principle is used to explain hydrogen bond strengths, strengths of acids and bases, stability of coordination compounds, etc. The book contains a balance of topics in theoretical and descriptive chemistry. New to this Edition: New and improved illustrations including symmetry and 3D molecular orbital representations Expanded coverage of spectroscopy, instrumental techniques, organometallic and bio-inorganic chemistry More in-text worked-out examples to encourage active learning and to prepare students for their exams • Concise coverage maximizes student understanding and minimizes the inclusion of details students are unlikely to use. • Discussion of elements begins with survey chapters focused on the main groups, while later chapters cover the elements in greater detail. • Each chapter opens with narrative introductions and includes figures, tables, and end-of-chapter problem sets.

The production of textile materials comprises a very large and complex global industry that utilises a diverse range of fibre types and creates a variety of textile products. As the great majority of such products are coloured, predominantly using aqueous dyeing processes, the coloration of textiles is a large-scale global business in which complex procedures are used to apply different types of dye to the various types of textile material. The development of such dyeing processes is the result of substantial research activity, undertaken over many decades, into the physico-chemical aspects of dye adsorption and the establishment of 'dyeing theory', which seeks to describe the mechanism by which dyes interact with textile fibres. Physico-Chemical Aspects of Textile Coloration provides a comprehensive treatment of the physical chemistry involved in the dyeing of the major types of natural, man-made and synthetic fibres with the principal types of dye. The book covers: fundamental aspects of the physical and chemical structure of both fibres and dyes, together with the structure and properties of water, in relation to dyeing; dyeing as an area of study as well as the terminology employed in dyeing technology and science; contemporary views of intermolecular forces and the nature of the interactions that can occur between dyes and fibres at a molecular level; fundamental

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principles involved in dyeing theory, as represented by the thermodynamics and kinetics of dye sorption; detailed accounts of the mechanism of dyeing that applies to cotton (and other cellulosic fibres), polyester, polyamide, wool, polyacrylonitrile and silk fibres; non-aqueous dyeing, as represented by the use of air, organic solvents and supercritical CO₂ fluid as alternatives to water as application medium. The up-to-date text is supported by a large number of tables, figures and illustrations as well as footnotes and widespread use of references to published work. The book is essential reading for students, teachers, researchers and professionals involved in textile coloration.

The second part of Hegel's Encyclopaedia of the Philosophical Sciences in outline. Translated, and with an introduction by, MJ Petry. This edition first published in 2002. Routledge is an imprint of Taylor & Francis, an informa company.

Written for calculus-inclusive general chemistry courses, Chemical Principles helps students develop chemical insight by showing the connections between fundamental chemical ideas and their applications. Unlike other texts, it begins with a detailed picture of the atom then builds toward chemistry's frontier, continually demonstrating how to solve problems, think about nature and matter, and visualize chemical concepts as working chemists do. It also offers an exceptional level of support to help students develop their mathematical and problem-solving skills. For the new edition, Chemical Principles now takes a modular approach, with coverage organized as a series of brief Topics within 13 major areas of focus, including a refresher on the fundamentals of chemistry and an online-only section on techniques.

Inorganic Chemistry, Third Edition, emphasizes fundamental principles, including molecular structure, acid-base chemistry, coordination chemistry, ligand field theory and solid state chemistry. The book is organized into five major themes: structure, condensed phases, solution chemistry, main group and coordination compounds, each of which is explored with a balance of topics in theoretical and descriptive chemistry. Topics covered include the hard-soft interaction principle to explain hydrogen bond strengths, the strengths of acids and bases, and the stability of coordination compounds, etc. Each chapter opens with narrative introductions and includes figures, tables and end-of-chapter problem sets. This new edition features updates throughout, with an emphasis on bioinorganic chemistry and a new chapter on nanostructures and graphene. In addition, more in-text worked-out examples encourage active learning and prepare students for exams. This text is ideal for advanced undergraduate and graduate-level students enrolled in the Inorganic Chemistry course. Includes physical chemistry to show the relevant principles from bonding theory and thermodynamics Emphasizes the chemical characteristics of main group elements and coordination chemistry Presents chapters that open with narrative introductions, figures, tables and end-of-chapter problem sets Featuring new experiments unique to this lab textbook, as well as new and revised essays and updated techniques, this Sixth Edition provides the up-to-date coverage students need to succeed in their coursework and future careers. From biofuels, green chemistry, and nanotechnology, the book's experiments, designed to utilize microscale glassware and equipment, demonstrate the relationship between organic chemistry and everyday life, with project-and biological or health science focused experiments. As they move through the book, students will experience traditional organic reactions and syntheses, the isolation of natural products, and molecular modeling. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Featuring new experiments, a new essay, and new coverage of nanotechnology, this organic chemistry laboratory textbook offers a comprehensive treatment of laboratory techniques including small-scale and some microscale methods that use standard-scale (macroscale) glassware and equipment. The book is organized based on essays and topics of current interest and covers a large number of traditional organic reactions and syntheses, as well as experiments with a biological or health science focus. Seven introductory technique-based experiments, thirteen project-based experiments, and sections on green chemistry and biofuels spark students' interest and engage them in

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the learning process. Instructors may choose to offer Cengage Learning's optional Premium Website, which contains videos on basic organic laboratory techniques. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Intended for students of intermediate organic chemistry, this text shows how to write a reasonable mechanism for an organic chemical transformation. The discussion is organized by types of mechanisms and the conditions under which the reaction is executed, rather than by the overall reaction as is the case in most textbooks. Each chapter discusses common mechanistic pathways and suggests practical tips for drawing them. Worked problems are included in the discussion of each mechanism, and "common error alerts" are scattered throughout the text to warn readers about pitfalls and misconceptions that bedevil students. Each chapter is capped by a large problem set.

When your environmental project reaches the point where the amount of data seems overwhelming, you will need a robust tool to help you manage it. Written by a recognized expert and software author with over 25 years of industry experience, *Relational Management and Display of Site Environmental Data* begins with an overview of site data management concepts, then progresses through relational data management theory, the design of the database tool, and implementing a data management system. It includes detailed information on data output including mapping and GIS applications, practical suggestions about working with laboratories, and concludes with pitfalls, horror stories, and successes in site data management. Current topics such as Internet data delivery and eXtensible Markup Language (XML) are also covered. The text provides you with the skills needed to effectively implement and operate an environmental data management system. The concepts covered can be applied to any system, from stand-alone through client-server to Web-based. *Relational Management and Display of Site Environmental Data* combines the fundamentals of data management and display with the author's many years of experience to help you create your own data management system or make a better-informed decision when selecting a commercial solution.

For more than a quarter century, Sittig's *Handbook of Toxic and Hazardous Chemicals and Carcinogens* has proven to be among the most reliable, easy-to-use and essential reference works on hazardous materials. Sittig's 5th Edition remains the lone comprehensive work providing a vast array of critical information on the 2,100 most heavily used, transported, and regulated chemical substances of both occupational and environmental concern. Information is the most vital resource anyone can have when dealing with potential hazardous substance accidents or acts of terror. Sittig's provides extensive data for each of the 2,100 chemicals in a uniform format, enabling fast and accurate decisions in any situation. The chemicals are presented alphabetically and classified as a carcinogen, hazardous substance, hazardous waste, or toxic pollutant. This new edition contains extensively expanded information in all 28 fields for each chemical

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(see table of contents) and has been updated to keep pace with world events. Chemicals classified as WMD have been included in the new edition as has more information frequently queried by first responders and frontline industrial safety personnel. *Includes and references European chemical identifiers and regulations. *The only single source reference that provides such in-depth information for each chemical. *The two volume set is designed for fast and accurate decision making in any situation.

Most people associate fluoride with the practice of intentionally adding fluoride to public drinking water supplies for the prevention of tooth decay. However, fluoride can also enter public water systems from natural sources, including runoff from the weathering of fluoride-containing rocks and soils and leaching from soil into groundwater. Fluoride pollution from various industrial emissions can also contaminate water supplies. In a few areas of the United States fluoride concentrations in water are much higher than normal, mostly from natural sources. Fluoride is one of the drinking water contaminants regulated by the U.S. Environmental Protection Agency (EPA) because it can occur at these toxic levels. In 1986, the EPA established a maximum allowable concentration for fluoride in drinking water of 4 milligrams per liter, a guideline designed to prevent the public from being exposed to harmful levels of fluoride. Fluoride in Drinking Water reviews research on various health effects from exposure to fluoride, including studies conducted in the last 10 years. All of Paula Bruice's extensive revisions to the Seventh Edition of Organic Chemistry follow a central guiding principle: support what modern students need in order to understand and retain what they learn in organic chemistry for successful futures in industry, research, and medicine. In consideration of today's classroom dynamics and the changes coming to the 2015 MCAT, this revision offers a completely new design with enhanced art throughout, reorganization of materials to reinforce fundamental skills and facilitate more efficient studying.

CONCEPTS OF CHEMICAL DEPENDENCY, Ninth Edition, provides comprehensive coverage and the latest information on a full spectrum of substance use disorders and the compounds commonly abused. Topics include the abuse of and addiction to alcohol; how the active agent in marijuana, THC, affects neural growth and development; the emerging body of evidence suggesting a relationship between marijuana abuse and psychotic disorders; the emerging body of evidence suggesting that marijuana is not as benign as it was thought to be a few years ago; and the abuse of cough syrups. Adding to the book's usefulness and relevance, Doweiko also covers topics not usually discussed in other substance abuse texts, including abuse of anabolic steroids, inhalants, infectious diseases associated with substance abuse, how the "war on drugs" has actually contributed to the problem of substance abuse/addiction in this country, and the "medical marijuana" debate. This edition includes new information on synthetic marijuana, mephredone, and dextromethorphan, among other substances; updates reflecting the new DSM-5; and a new chapter on the

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Biopsychosocial Model of Addiction. Students report that they appreciate the author's balanced approach, which allows them to form their own opinions, in contrast to some books that "preach" that "drugs are bad for you." Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. Fundamentals of General, Organic, and Biological Chemistry by McMurry, Ballantine, Hoeger, and Peterson provides background in chemistry and biochemistry with a relatable context to ensure students of all disciplines gain an appreciation of chemistry's significance in everyday life. Known for its clarity and concise presentation, this book balances chemical concepts with examples, drawn from students' everyday lives and experiences, to explain the quantitative aspects of chemistry and provide deeper insight into theoretical principles. The Seventh Edition focuses on making connections between General, Organic, and Biological Chemistry through a number of new and updated features -- including all-new Mastering Reactions boxes, Chemistry in Action boxes, new and revised chapter problems that strengthen the ties between major concepts in each chapter, practical applications, and much more. NOTE: this is just the standalone book, if you want the book/access card order the ISBN below: 032175011X / 9780321750112

Fundamentals of General, Organic, and Biological Chemistry Plus MasteringChemistry with eText -- Access Card Package Package consists of: 0321750837 / 9780321750839 Fundamentals of General, Organic, and Biological Chemistry 0321776461 / 9780321776464 MasteringChemistry with Pearson eText -- Valuepack Access Card -- for Fundamentals of General, Organic, and Biological Chemistry

Sustainable Resource Recovery and Zero Waste Approaches covers waste reduction, biological, thermal and recycling methods of waste recovery, and their conversion into a variety of products. In addition, the social, economic and environmental aspects are also explored, making this a useful textbook for environmental courses and a reference book for both universities and companies. Provides a novel approach on how to achieve zero wastes in a society Shows the roadmap on achieving Sustainable Development Goals Considers critical aspects of municipal waste management Covers recent developments in waste biorefinery, thermal processes, anaerobic digestion, material recycling and landfill mining

Developing a unified theory of production and investment, Vernon L. Smith explores the empirical and theoretical nature of the interdependence between "short-run" current account production decisions and "long-run" investment planning, taking into account such technological factors as equipment replacement. The book builds an explicit theory of production planning by integrating production, investment, and equipment replacement policy, derives the decision implications of the use of durable capital goods, and examines the production function concept and the production decision process in engineering design and in general business practice.

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This text is different--by design. By relating fundamental concepts of general, organic, and biological chemistry to the everyday world, Jan Smith effectively engages students with bulleted lists, extensive illustrations, and step-by-step problem solving. Smith writes with an approach that delivers need-to-know information in a succinct style for today's students. Armed with an excellent illustration program full of macro-to-micro art, as well as many applications to biological, medical, consumer, and environmental topics, this book is a powerhouse of learning for students.

The 7th Edition of Gary Christian's Analytical Chemistry focuses on more in-depth coverage and information about Quantitative Analysis (aka Analytical Chemistry) and related fields. The content builds upon previous editions with more enhanced content that deals with principles and techniques of quantitative analysis with more examples of analytical techniques drawn from areas such as clinical chemistry, life sciences, air and water pollution, and industrial analyses.

Toxicological Survey of African Medicinal Plants provides a detailed overview of toxicological studies relating to traditionally used medicinal plants in Africa, with special emphasis on the methodologies and tools used for data collection and interpretation. The book considers the physical parameters of these plants and their effect upon various areas of the body and human health, including chapters dedicated to genotoxicity, hepatotoxicity, nephrotoxicity, cardiotoxicity, neurotoxicity, and specific organs and systems. Following this discussion of the effects of medicinal plants is a critical review of the guidelines and methods in use for toxicological research as well as the state of toxicology studies in Africa. With up-to-date research provided by a team of experts, Toxicological Survey of African Medicinal Plants is an invaluable resource for researchers and students involved in pharmacology, toxicology, phytochemistry, medicine, pharmacognosy, and pharmaceutical biology. Offers a critical review of the methods used in toxicological survey of medicinal plants Provides up-to-date toxicological data on African medicinal plants and families Serves as a resource tool for students and scientists in the various areas of toxicology

"[A] welcome addition to the reference materials necessary for the study of nurse anesthesia....The textbook is divided into logical, easy to use sections that cover all areas necessary for the practice of nurse anesthesia....This is a text that is easy to read and able to be incorporated into any nurse anesthesia chemistry and physics course. I would recommend this textbook to any program director." --Anthony Chipas, PhD, CRNA Division Director Anesthesia for Nurses Program Medical University of South Carolina At last. . . a combined chemistry & physics nursing anesthesia text. This textbook offers combined coverage of chemistry and physics to help students learn the content needed to master the underlying principles of nursing anesthesia. Because many graduate nursing students are uncomfortable with chemistry and physics, this text presents only the specific content in chemistry and physics that relates to anesthesia. Written in a conversational, accessible style, the book teaches at a highly understandable level, so as to bridge the gap between what students recall from their undergraduate biochemistry and physics courses, and what they need to know as nurse anesthetists. The book contains many illustrations that demonstrate how the scientific concepts relate directly to clinical application in anesthesia. Chapters cover key topics relating to anesthesiology, including

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the basics of both chemistry and physics, fluids, a concentration on gas laws, states of matter, acids and bases, electrical circuits, radiation, and radioactivity. With this text, students will benefit from: A review of the math, chemistry, and physics basics that relate to clinical anesthesia A conversational presentation of just what students need to know, enabling a fast and complete mastery of clinically relevant scientific concepts Heavy use of illustrations throughout chapters to complement the text End-of-chapter review questions that help students assess their learning PowerPoint Slides available to qualified instructors.

Chemistry of 2-Oxoaldehydes and 2-Oxoacids offers complete coverage on 2-oxoaldehydes and 2-oxoacid, which to date have not been covered in a comprehensive manner. Novel reactions related to 2-oxoaldehydes and 2-oxoacids on keto and aldehydic groups (both participating separately or in combination), decarboxylative reactions, spectral analysis and diverse applications are explored. The book is divided into two parts, with the first outlining methods for the preparation and physical properties of 2-Oxoaldehydes, along with the structure, spectral characteristics and reactivity of 2-Oxoaldehydes. The second part covers the preparation and physical properties of 2-Oxoacids and the synthesis of many related reactions. This book is essential reading for researchers working on these types of reactions in organic chemistry, medicinal chemistry, natural product chemistry and pharmaceutical chemistry. Covers various synthetic procedures for the synthesis of 2-Oxoaldehydes and 2-Oxoacids Provides information about different types of reactions, such as C-H activation reactions, coupling reactions, decarboxylative reactions, and nucleophilic reactions for the synthesis of different biologically active compounds Includes the use of 2-Oxoaldehyde and 2-Oxoacid as the starting point for the synthesis of different synthons that can be used for various medicinally important compounds

How can one construct dynamical systems obeying the first and second laws of thermodynamics: mean energy is conserved and entropy increases with time? This book answers the question for classical probability (Part I) and quantum probability (Part II). A novel feature is the introduction of heat particles which supply thermal noise and represent the kinetic energy of the molecules. When applied to chemical reactions, the theory leads to the usual nonlinear reaction-diffusion equations as well as modifications of them. These can exhibit oscillations, or can converge to equilibrium. In this second edition, the text is simplified in parts and the bibliography has been expanded. The main difference is the addition of two new chapters; in the first, classical fluid dynamics is introduced. A lattice model is developed, which in the continuum limit gives us the Euler equations. The five Navier-Stokes equations are also presented, modified by a diffusion term in the continuity equation. The second addition is in the last chapter, which now includes estimation theory, both classical and quantum, using information geometry.

Praise for the first edition: "[A] welcome addition to the reference materials necessary for the study of nurse anesthesia....The textbook is divided into logical, easy to use sections that cover all areas necessary for the practice of nurse anesthesia....This is a text that is easy to read and able to be incorporated into any nurse anesthesia chemistry and physics course. I would recommend this textbook to any program director." --Anthony Chipas, PhD, CRNA Division Director, Anesthesia for Nurses Program Medical University of South Carolina Nurse anesthesia students will welcome the second edition of this text designed for the combined course in chemistry and physics that is required for this program. It is written in a clear, conversational style to counteract the trepidation that often accompanies the study of chemistry and physics, and includes only those core scientific concepts that relate to clinical anesthesia application. Numerous illustrations demonstrate how the scientific concepts relate directly to their clinical application in anesthesia, and plentiful case studies exemplify and reinforce basic concepts. Review question at the end of each chapter facilitate self-assessment. This second edition offers numerous features that will further

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assist students with understanding and mastery of the material. These new features are the direct result of knowledge gained from on-line and traditional classroom teaching experiences. They include chapter summaries, additional questions and answers at the end of each chapter specific to nurse anesthesia, end-of-chapter summaries, and lists of formulas and constants discussed in the book. Fifteen videos vividly demonstrate the key principles of the chemistry and physics of nurse anesthesia. Corresponding to various sections of the book, they supplement and illustrate text content. Also available are revised PowerPoint slides for faculty use. The first edition of this popular text is currently being used by eight nurse anesthesia programs throughout the United States and many additional programs plan to adopt the second edition. New to the Second Edition: Emphasizes content in chemistry and physics that relates specifically to anesthesia, with a strong focus on gases Includes case studies to illustrate and reinforce knowledge Provides additional end-of-chapter problems focused on anesthesia Relates core scientific concepts to clinical anesthesia application Offers fifteen videos demonstrating key principles of the physics and chemistry of nurse anesthesia

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