

## The Yaws Handbook Of Physical Properties For Hydrocarbons And Chemicals Second Edition Physical Properties For More Than 54000 Organic And C1 To C100 Organics And Ac To Zr Inorganics

Refineries and petrochemical engineers today are accepting more unconventional feedstocks such as heavy oil and shale, causing unique challenges on the processing side of the business. To create more reliable engineering design of process equipment for the petrochemical industry, petroleum engineers and process managers are forced to study the physical properties and compounds of these particular hydrocarbons. Instead of looking up each compound's information, The Yaws Handbook of Physical Properties for Hydrocarbons and Chemicals, Second Edition presents an easy-to-use format with rapid access to search for the particular compound and understand all the complex calculations in one tabular format. Understanding the composition of hydrocarbons is not easy to calculate quickly or accurately, but this must-have reference leads the engineer to better estimated properties and fractions from easily measured components. Expanded to cover more total compounds and relevant functions, The Yaws Handbook of Physical Properties for Hydrocarbons and Chemicals, Second Edition remains a necessary reference tool for every petrochemical and petroleum engineers' library. Coverage added on elements for hydrocarbons and chemicals with more than 200 real-world cases included for practicality Increased compound coverage from 41,000 to 54,000 total compounds to quickly access for everyday use New functions added such as testing boiling point temperature and new data on density and refractory index This reference provides engineers with values for thermal conductivity as a function of temperature for the major organic compounds.

A complete restructuring and updating of the classic 1982 Handbook of Chemical Property Estimation Methods (commonly known as "Lyman's Handbook"), the Handbook of Property Estimation Methods for Chemicals: Environmental and Health Sciences reviews and recommends practical methods for estimating environmentally important properties of organic chemicals. One of the most eagerly anticipated revisions in scientific publishing, the new Handbook includes both a foreword and a chapter by Dr. Lyman. Written for convenient and frequent use, each chapter integrates recent developments while retaining the elements that made the first version a classic. As a reference tool, the New Edition is indispensable. It comprehensively reviews recent developments in chemical property estimation methods and focuses on the properties most critical to environmental fate assessment.

The Yaws Handbook of Physical Properties for Hydrocarbons and Chemicals Physical Properties for More Than 54,000 Organic and Inorganic Chemical Compounds, Coverage for C1 to C100 Organics and Ac to Zr Inorganics Gulf Professional Publishing

The Harmony Search Algorithm (HSA) is one of the most well-known techniques in the field of soft computing, an important paradigm in the science and engineering community. This volume, the proceedings of the 2nd International Conference on Harmony Search Algorithm 2015 (ICHSA 2015), brings together contributions describing the latest developments in the field of soft computing with a special focus on HSA techniques. It includes coverage of new methods that have potentially immense application in various fields. Contributed articles cover aspects of the following topics related to the Harmony Search Algorithm: analytical studies; improved, hybrid and multi-objective variants; parameter tuning; and large-scale applications. The book also contains papers discussing recent advances on the following topics: genetic algorithms; evolutionary strategies; the firefly algorithm and cuckoo search; particle swarm optimization and ant colony optimization; simulated annealing; and local search techniques. This book offers a valuable snapshot of the current status of the Harmony Search Algorithm and related techniques, and will be a useful reference for practising researchers and advanced students in computer science and engineering.

Thermodynamic property data are important in many engineering applications in the chemical processing and petroleum refining industries. The "Handbook of Thermodynamic Diagrams" series presents volume and enthalpy diagrams (graphs) for the major organic chemicals and hydrocarbons, as well as the major inorganic compounds and elements. The graphs, arranged by carbon number and chemical formula, cover a wide range of pressures and temperatures to enable engineers to determine quickly values at various points. This volume covers inorganic compounds and elements.

Covering the properties of over 8,200 compounds, this volume, written by the world's leading authority on chemical engineering, is more comprehensive and thorough than any other book of its kind. Antoine coefficients are one of the most important properties to industry processes, and Carl Yaws provides all the skills necessary for every chemical engineer, both academic and experienced. Understanding Antoine coefficients for vapor pressure extends to numerous other practical engineering processes, such as pure components in storage vessels, the concentration of species in vapor, relief valve design, as well as emissions into the environment from exposed liquids. The properties listed in The Yaws Handbook of Vapor Pressure: Antoine Coefficients are useful when calculating: Bubble point temperatures or pressures Dew point temperatures or pressures Vapor-liquid equilibrium And many other processes, for distillation columns, phase separators, and other mass transfer process equipment. Not available anywhere else, the information in this handbook is a valuable addition to any engineer's library.

Ben shu shi yi bu guan yu mei guo hei ren li shi de zhang pian xiao shuo. Shi ba shi ji jia na, Yi dui tong fu yi mu de jie mei zi chu sheng qi bian li san zai liang ge bu tong de cun zhuang, Bu zhi dao bi ci de cun zai. Yi ge nü hai jiang jia ji yi ge ying guo nan ren, Zhu zai hai an jiao cheng bao shu shi ti mian de xiao wu zhong, An du yi sheng. Ling yi ge nü hai ze jiang zai cun zhuang zao xi zhong bei fu, Hou bei zuo wei nu li fan mai zhi da yang bi an. Kua yue ba ge shi dai, hui jia zhi lu yi lu zhui sui liang ge nü hai ji qi jia zu hou ren de ren sheng li cheng, Jie shi le ta men chong

man dong dang de ren sheng kun jing.

Chemical Engineering Design is one of the best-known and most widely adopted texts available for students of chemical engineering. It completely covers the standard chemical engineering final year design course, and is widely used as a graduate text. The hallmarks of this renowned book have always been its scope, practical emphasis and closeness to the curriculum. That it is written by practicing chemical engineers makes it particularly popular with students who appreciate its relevance and clarity. Building on this position of strength the fifth edition covers the latest aspects of process design, operations, safety, loss prevention and equipment selection, and much more. Comprehensive in coverage, exhaustive in detail, and supported by extensive problem sets at the end of each chapter, this is a book that students will want to keep to hand as they enter their professional life. The leading chemical engineering design text with over 25 years of established market leadership to back it up; an essential resource for the compulsory design project all chemical engineering students take in their final year A complete and trusted teaching and learning package: the book offers a broader scope, better curriculum coverage, more extensive ancillaries and a more student-friendly approach, at a better price, than any of its competitors Endorsed by the Institution of Chemical Engineers, guaranteeing wide exposure to the academic and professional market in chemical and process engineering.

Carl Yaws here presents over 7,800 organic and inorganic chemicals, and hydrocarbons. Spanning gases, liquids and solids, and covering all critical properties (including acentric factor, density, enthalpy of vaporization, and surface tension), this volume represents more properties on more chemicals than any single work of its kind, from C1 to C100 organics and Ac to Zr inorganics. Designed and formatted for field, lab or classroom usage, it gives the reader unparalleled access to invaluable data.

Polymers are substances containing a large number of structural units joined by the same type of linkage. These substances often form into a chain-like structure. Starch, cellulose, and rubber all possess polymeric properties. Today, the polymer industry has grown to be larger than the aluminium, copper and steel industries combined. Polymers already have a range of applications that far exceeds that of any other class of material available to man. Current applications extend from adhesives, coatings, foams, and packaging materials to textile and industrial fibres, elastomers, and structural plastics. Polymers are also used for most composites, electronic devices, biomedical devices, optical devices, and precursors for many newly developed high-tech ceramics. This book presents leading-edge research in this rapidly-changing and evolving field.

Do you need guidelines for choosing a substitute organic solvent that is safer to use? Do you need an effective, cheap but perhaps temporary way to reduce exposures before you can convince your employer to spend money on a long-term or more reliable solution? Do you need information about local exhaust ventilation or personal protective equipment like respirators and gloves? Industrial Hygiene Control of Airborne Chemical Hazards provides the answers to these questions and more. Science-based and quantitative, the book introduces methods for controlling exposures in diverse settings, focusing squarely on airborne chemical hazards. It bridges the gap between existing knowledge of physical principles and their modern application with a wealth of recommendations, techniques, and tools accumulated by generations of IH practitioners to control chemical hazards. Provides a unique, comprehensive tool for facing the challenges of controlling chemical hazards in the workplace. Although William Pependorf has written the book at a fundamental level, he assumes the reader has some experience in science and math, as well as in manufacturing or other work settings with chemical hazards, but is inexperienced in the selection, design, implementation, or management of chemical exposure control systems. Where the book is quantitative, of course there are lots of formulae, but in general the author avoids vague notation and long derivations.

"Vent Collection System, Design and Safety to Viscosity-Gravity-Contrast, Estimation"

Written for those less comfortable with science and mathematics, this text introduces the major chemical engineering topics for non-chemical engineers. With a focus on the practical rather than the theoretical, the reader will obtain a foundation in chemical engineering that can be applied directly to the workplace. By the end of this book, the user will be aware of the major considerations required to safely and efficiently design and operate a chemical processing facility. Simplified accounts of traditional chemical engineering topics are covered in the first two-thirds of the book, and include: materials and energy balances, heat and mass transport, fluid mechanics, reaction engineering, separation processes, process control and process equipment design. The latter part details modern topics, such as biochemical engineering and sustainable development, plus practical topics of safety and process economics, providing the reader with a complete guide. Case studies are included throughout, building a real-world connection. These case studies form a common thread throughout the book, motivating the reader and offering enhanced understanding. Further reading directs those wishing for a deeper appreciation of certain topics. This book is ideal for professionals working with chemical engineers, and decision makers in chemical engineering industries. It will also be suitable for chemical engineering courses where a simplified introductory text is desired.

Multiscale Modeling for Process Safety Applications is a new reference demonstrating the implementation of multiscale modeling techniques on process safety applications. It is a valuable resource for readers interested in theoretical simulations and/or computer simulations of hazardous scenarios. As multi-scale modeling is a computational technique for solving problems involving multiple scales, such as how a flammable vapor cloud might behave if ignited, this book provides information on the fundamental topics of toxic, fire, and air explosion modeling, as well as modeling jet and pool fires using computational fluid dynamics. The book goes on to cover nanomaterial toxicity, QPSR analysis on relation of chemical structure to flash point, molecular structure and burning velocity, first principle studies of reactive chemicals, water and air reactive chemicals, and dust explosions. Chemical and process safety professionals, as well as faculty and graduate researchers, will benefit from the detailed coverage provided in this book. Provides the only comprehensive source addressing the use of multiscale modeling in the context of process safety Bridges multiscale modeling with process safety, enabling the reader to understand mapping between problem detail and effective usage of resources Presents an overall picture of addressing safety problems in all levels of modeling and the latest approaches to each in the field Features worked out examples, case studies, and a question bank to aid understanding and involvement for the reader

This complete revision of Applied Process Design for Chemical and Petrochemical Plants, Volume 1 builds upon Ernest E. Ludwig's classic text to further enhance its use as a chemical engineering process design manual of methods and proven fundamentals. This new edition includes important supplemental mechanical and related data, nomographs and charts. Also included within are improved techniques and fundamental methodologies, to guide the engineer in designing process equipment and applying chemical processes to properly detailed equipment. All three volumes of Applied Process Design for Chemical and Petrochemical Plants serve the practicing engineer by providing organized design procedures, details on the equipment suitable for application selection, and charts in readily usable form. Process engineers, designers, and operators will find more chemical petrochemical plant design data in: Volume 2, Third Edition, which covers distillation and packed towers as well as material on azeotropes



those who are directly involved in the chemical industry to others in related industries and activities. It provides not only the underlying science and technology for important industry sectors, but also broad coverage of critical supporting topics. Industrial processes and products can be much enhanced through observing the tenets and applying the methodologies found in chapters on Green Engineering and Chemistry (specifically, biomass conversion), Practical Catalysis, and Environmental Measurements; as well as expanded treatment of Safety, chemistry plant security, and Emergency Preparedness. Understanding these factors allows them to be part of the total process and helps achieve optimum results in, for example, process development, review, and modification. Important topics in the energy field, namely nuclear, coal, natural gas, and petroleum, are covered in individual chapters. Other new chapters include energy conversion, energy storage, emerging nanoscience and technology. Updated sections include more material on biomass conversion, as well as three chapters covering biotechnology topics, namely, Industrial Biotechnology, Industrial Enzymes, and Industrial Production of Therapeutic Proteins.

This substantially revised and updated classic reference offers a valuable overview and myriad details on current chemical processes, products, and practices. No other source offers as much data on the chemistry, engineering, economics, and infrastructure of the industry. The two volume Handbook serves a spectrum of individuals, from those who are directly involved in the chemical industry to others in related industries and activities. Industrial processes and products can be much enhanced through observing the tenets and applying the methodologies found in the book's new chapters.

By far the most commonly encountered and energy-intensive unit operation in almost all industrial sectors, industrial drying continues to attract the interest of scientists, researchers, and engineers. The Handbook of Industrial Drying, Fourth Edition not only delivers a comprehensive treatment of the current state of the art, but also serves as a consultative reference for streamlining industrial drying operations. New to the Fourth Edition: Computational fluid dynamic simulation Solar, impingement, and pulse combustion drying Drying of fruits, vegetables, sugar, biomass, and coal Physicochemical aspects of sludge drying Life-cycle assessment of drying systems Covering commonly encountered dryers as well as innovative dryers with future potential, the Handbook of Industrial Drying, Fourth Edition not only details the latest developments in the field, but also explains how improvements in dryer design and operation can increase energy efficiency and cost-effectiveness.

Written by one of the most prolific and well-respected chemical engineers in the industry, this is the most comprehensive and thorough volume ever written on the thermodynamic properties of hydrocarbons and chemicals. This volume covers the spectrum, including chapters on the heat capacity and entropy of gas, solids and liquids, the entropy of formation, and many other topics. The design of heat exchangers and other equipment for heating or cooling substances to temperatures necessary in process applications requires knowledge of heat capacity, covered in the first portion of the book. The heat effects of chemical reactions are ascertained from enthalpy of formation. Other chapters cover the Helmholtz energy of formation and internal energy of formation, which is useful in modeling and ascertaining the energy of explosions. This coverage greatly exceeds the coverage of any other book and makes The Yaws Handbook of Thermodynamic Properties of Hydrocarbons and Chemicals a must-have for anyone working in the fields of chemical engineering, process engineering, refining and chemistry.

Bottom line: For a holistic view of chemical engineering design, this book provides as much, if not more, than any other book available on the topic. --Extract from Chemical Engineering Resources review. Chemical Engineering Design is one of the best-known and widely adopted texts available for students of chemical engineering. It deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this US edition has been specifically developed for the US market. It covers the latest aspects of process design, operations, safety, loss prevention and equipment selection, among others. Comprehensive in coverage, exhaustive in detail, it is supported by extensive problems and a separate solutions manual for adopting tutors and lecturers. In addition, the book is widely used by professions as a day-to-day reference. Provides students with a text of unmatched relevance for the Senior Design Course and Introductory Chemical Engineering Courses Teaches commercial engineering tools for simulation and costing Comprehensive coverage of unit operations, design and economics Strong emphasis on HS&E issues, codes and standards, including API, ASME and ISA design codes and ANSI standards 108 realistic commercial design projects from diverse industries

Ionic Liquids (ILs) are one of the most interesting and rapidly developing areas of modern physical chemistry, technologies and engineering. This book, consisting of 29 chapters gathered in 4 sections, reviews in detail and compiles information about some important physical-chemical properties of ILs and new practical approaches. This is the first book of a series of forthcoming publications on this field by this publisher. The first volume covers some aspects of synthesis, isolation, production, modification, the analysis methods and modeling to reveal the structures and properties of some room temperature ILs, as well as their new possible applications. The book will be of help to chemists, physicists, biologists, technologists and other experts in a variety of disciplines, both academic and industrial, as well as to students and PhD students. It may help to promote the progress in ILs development also.

This book provides comprehensive safety and health-related data for hydrocarbons and organic chemicals as well as selected data for inorganic chemicals.

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