

## Marshall And Swift Cost Index Table Bing

A reference that details the pertinent chemical reactions and emphasizes the plant design and operations of petroleum processing procedures. The handbook is divided into four sections: products, refining, manufacturing processes, and treating processes. Wherever possible, shortcut methods of calcula  
This book insures the legacy of the original 1950 classic, Process Heat Transfer, by Donald Q. Kern. This second edition book is divided into three parts: Fundamental Principles; Heat Exchangers; and Other Heat Transfer Equipment/ Considerations. - Part I provides a series of chapters concerned with introductory topics that are required when solving heat transfer problems. This part of the book deals with topics such as steady-state heat conduction, unsteady-state conduction, forced convection, free convection, and radiation. - Part II is considered by the authors to be the "meat" of the book - addressing heat transfer equipment design procedures and applications. In addition to providing a more meaningful treatment of the various types of heat exchangers, this part also examines the impact of entropy calculations on exchanger design. - Part III of the book examines other related topics of interest, including boiling and condensation, refrigeration and cryogenics, boilers, cooling towers and quenchers, batch and unsteady-state processes, health & safety and the accompanying topic of risk. An Appendix is also included. What is new in the 2nd edition Changes that are addressed in the 2nd edition so that Kern's original work continues to remain relevant in 21st century process engineering include: - Updated Heat Exchanger Design - Increased Number of Illustrative Examples - Energy Conservation/ Entropy Considerations - Environmental Considerations - Health & Safety - Risk Assessment - Refrigeration and Cryogenics - Inclusion of SI Units

This 69th volume presents information on circulating fluidized bed reactors and looks at subjects ranging from basic concepts and hydrodynamics to structure, properties and applications of polyolefines produced by single-site catalyst technology.

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 and ideal/non-ideal systems. Volume 3, Third Edition, which covers heat transfer, refrigeration systems, compression surge drums, and mechanical drives. A. Kayode Coker, is Chairman of Chemical & Process Engineering Technology department at Jubail Industrial College in Saudi Arabia. He's both a chartered scientist and a chartered chemical engineer for more than 15 years, and an author of Fortran Programs for Chemical Process Design, Analysis and Simulation, Gulf Publishing Co., and Modeling of Chemical Kinetics and Reactor Design, Butterworth-Heinemann. Provides improved design manuals for methods and proven fundamentals of process design with related data and charts Covers a complete range of basic day-to-day petrochemical operation topics with new material on significant industry changes since 1995.

Finance for Engineers  
Architect's Essentials of Cost Management  
Profitability, Mechanization and Economics of Scale  
Piping Design Handbook

Manual of Process Economic Evaluation

Boeckh Building Cost Index Numbers

*Emphasizes the design, control and functioning of various unit operations - offering shortcut methods of calculation along with computer and nomographic solution techniques. Provides practical sections on conversion to and from SI units and cost indexes for quick updating of all cost information.* *This book is designed for mechanical, chemical, process design, project, and materials engineers and continuing-education courses in these disciplines.*

*For four decades, Petroleum Refining has guided thousands of readers toward a reliable understanding of the field, and through the years has become the standard text in many schools and universities around the world offering petroleum refining classes, for self-study, training, and as a reference for industry professionals. The sixth edition of this perennial bestseller continues in the tradition set by Jim Gary as the most modern and authoritative guide in the field. Updated and expanded to reflect new technologies, methods, and topics, the book includes new discussion on the business and economics of refining, cost estimation and complexity, crude origins and properties, fuel specifications, and updates on technology, process units, and catalysts. The first half of the book is written for a general audience to introduce the primary economic and market characteristics of the industry and to describe the inputs and outputs of refining. Most of this material is new to this edition and can be read independently or in parallel with the rest of the text. In the second half of the book, a technical review of the main process units of a refinery is provided, beginning with distillation and covering each of the primary conversion and treatment processes. Much of this material was reorganized, updated, and rewritten with greater emphasis on reaction chemistry and the role of catalysis in applications. Petroleum Refining: Technology, Economics, and Markets is a book written for users, the practitioners of refining, and all those who want to learn more about the field.*

*Evaluating the cost of acquiring major pieces of equipment also necessitates costing their life maintenance. Providing coverage of recent advances in this field, this book covers such topics as reliability improvement warranty, computer hardware/software costing, and reliability engineering.*

*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*

*Petroleum Refining*

*Fundamentals and Applications*

*Handbook of Industrial Drying*

*Project and Cost Engineers' Handbook, Third Edition,*

*Food Process Design*

*Unit Operations Handbook*

*The Leading Integrated Chemical Process Design Guide: Now with New Problems, New Projects, and More More than ever, effective design is the focal point of sound chemical engineering. Analysis, Synthesis, and Design of Chemical Processes, Third Edition, presents design as a creative process that integrates both the big picture and the small details-and knows which to stress when, and why. Realistic from start to finish, this book moves readers beyond classroom exercises into open-ended, real-world process problem solving. The authors introduce integrated techniques for every facet of the discipline, from finance to operations, new plant design to existing process optimization. This fully updated Third Edition presents entirely new problems at the end of every chapter. It also adds extensive coverage of batch process design, including realistic examples of equipment sizing for batch sequencing; batch scheduling for multi-product plants; improving production via intermediate storage and parallel equipment; and new optimization techniques specifically for batch processes. Coverage includes Conceptualizing and analyzing chemical processes: flow diagrams, tracing, process conditions, and more Chemical process economics: analyzing capital and manufacturing costs, and predicting or assessing profitability Synthesizing and optimizing chemical processing: experience-based principles, BFD/PFD, simulations, and more Analyzing process performance via I/O models, performance curves, and other tools Process troubleshooting and "debottlenecking" Chemical engineering design and society: ethics, professionalism, health, safety, and new "green engineering" techniques Participating successfully in chemical engineering design teams Analysis, Synthesis, and Design of Chemical Processes, Third Edition, draws on nearly 35 years of innovative chemical engineering instruction at West Virginia University. It includes suggested curricula for both single-semester and year-long design courses; case studies and design projects with practical applications; and appendices with current equipment cost data and preliminary design information for eleven chemical processes-including seven brand new to this edition.*

*First published in 1998, this book introduces a new concept of profitability, called the 'efficiency rate of profit', which is defined as the ratio between the unit net margin and the unit capital requirement and shows how the efficiency rate of profit may be used in the assessment of mechanization and economies of scale. The book also shows how the efficiency rate of profit relates to the financial opportunity cost of investment, thus resolving the long-standing controversy over 'interest as a cost'. Using real-world plant-level data, the book explains fully the process of mechanization, how increasing returns to scale works at the plant level through power rule relating plant or equipment cost to capacity and how and why it is more cost effective to combine mechanization with expanding the scale of production in one combined 'package' of efficiency improvement. Applying the proven success of modern process engineering economics to the food industry, Food Plant Economics considers the design and economic analysis of food preservation, food manufacturing, and food ingredients plants with regard to a number of representative food processes. Economic analysis of food plants requires the evaluation of quantita*

*As the range of feedstocks, process technologies and products expand, biorefineries will become increasingly complex manufacturing systems. Biorefineries and Chemical Processes: Design, Integration and Sustainability Analysis presents process modelling and integration, and whole system life cycle analysis tools for the synthesis, design, operation and sustainable development of biorefinery and chemical processes. Topics covered include: Introduction: An introduction to the concept and development of biorefineries. Tools: Included here are the methods for detailed economic and environmental impact analyses; combined economic value and environmental impact analysis; life cycle assessment (LCA); multi-criteria analysis; heat integration and utility system design; mathematical programming based optimization and genetic algorithms. Process synthesis and design: Focuses on modern unit operations and innovative process flowsheets. Discusses thermochemical and biochemical processing of biomass, production of chemicals and polymers from biomass, and processes for carbon dioxide capture. Biorefinery systems: Presents biorefinery process synthesis using whole system analysis. Discusses bio-oil and algae biorefineries, integrated fuel cells and renewables, and heterogeneous catalytic reactors. Companion website: Four case studies, additional exercises and examples are available online, together with three supplementary chapters which address waste and emission minimization, energy storage and control systems, and the optimization and reuse of water. This textbook is designed to bridge a gap between engineering design and sustainability assessment, for advanced students and practicing process designers and engineers.*

*Economic Evaluations in Exploration*

*Volume 65 -- Waste: Nuclear Reprocessing and Treatment Technologies to Wastewater Treatment: Multilateral Approach*

*Petroleum Processing Handbook*

*Encyclopedia of Chemical Processing and Design*

*Process Engineering Economics*

*Ludwig's Applied Process Design for Chemical and Petrochemical Plants*

*This book serves a unique purpose within the world of engineering. It covers the economics of modern manufacturing and focuses on examining the techniques and methods from a cost perspective. It can be used by both students and professionals alike. The book is useful to students in industrial engineering and mechanical engineering programs as a primary textbook for engineering economy, production costing, and related courses. It can also be used by MBA students specializing in production management and finance. Specific topics of coverage include the computation of direct and indirect cost for manufacturing operations, including a variety of overhead operations in such an environment. Costing of manufacturing methods such as casting, forging, turning, milling, and welding is addressed along with inventory analysis. The book also includes fundamental concepts such as cash flow analysis, present and future worth analysis, and rate of return analysis. Related topics such as equipment replacement, comparison of alternatives, depreciation, buy versus make decisions, and equivalent are covered in detail as well. Key Features: Addresses the costing of manufacturing operations through a step-by-step problem solving approach. Includes traditional engineering topics such as cash flow analysis, present worth, future worth analysis, replacement analysis, equivalence, and depreciation are addressed in depth as well. Offers a variety of solved examples that can be used to develop a thorough understanding of the underlying concept. Provides a number of practice problems at the end of each chapter. Presents a large number of figures and tables in almost every chapter, to assist in visualizing the concept and apply it successfully. Production Economics: Evaluating Costs of Operations in Manufacturing and Service Industries focuses on rigorous problem solving. Each topic is presented succinctly along with numerous solved examples, along with a large number of end-of-chapter practice problems where applicable.*

*Chemical Engineering Design: SI Edition is one of the best-known and most widely used textbooks available for students of chemical engineering. The enduring hallmarks of this classic book are its scope and practical emphasis which make it particularly popular with instructors and students who appreciate its relevance and clarity. This new edition provides coverage of the latest aspects of process design, operations, safety, loss prevention, equipment selection, and much more, including updates on plant and equipment costs, regulations and technical standards. Includes new content covering food, pharmaceutical and biological structures and unit operations commonly used Features expanded coverage on the design of reactors Provides updates on plant and equipment costs, regulations and technical standards Integrates coverage with Honeywell's Unisim software for process design and simulation Includes online access to Engineering's Cleopatra cost estimating software*

*This timely reference utilizes simplified computer strategies to analyze, develop, and optimize industrial food processes and offers procedures to assess various operating conditions, engineering and economic relationships, and the physical and transport properties of foods for the design of the most efficient food manufacturing technologies and eq*

*This volume will enable the reader to successfully undertake pre-project evaluations, especially in the areas of refining and petrochemistry. It encompasses all the essential steps: market analysis, comparative studies of technical and economic issues, sensitivity studies, sizing and costing of the equipment required for an industrial-scale plant; estimation of capital spending, calculation of costs and sales prices, etc. The first edition of this manual proved to be a very valuable teaching tool for universities and advanced engineering and business schools, both in France and abroad. It is essential for the rapid evaluation of the cost and profitability of proposed plants and of those already in operation. It has been widely used by engineers, consulting firms, and corporate research and development departments. Its status as the only current publication that covers all the steps involved in the economic evaluation of projects will render it particularly valuable to its users. It will quickly become indispensable to everyone whose job it is to evaluate the economic impact of the development, cancellation or reorientation of a project.Contents: 1. Market analysis. 2. The elements of economic calculation. 3. The determination of battery limits investments. Appendix 1. Functional modules method (FMM). Appendix 2. Pre-estime method. Bibliography. Index*

*Air Pollution Control Technology Handbook*

*Tailings and Mine Waste 2002*

*Chemical Engineering Design*

*Basic Cost Engineering*

*Encyclopedia of Chemical Processing and Design, Volume 69 (Supplement 1)*

*Estimating Building Costs*

*Companies live or die on the basis of estimating their costs. Preparing estimates and bidding for new jobs is a complex and often costly process. There is no substitute for on the job training -- until now. Drawing on the authors' combined experience of more than 70 years, Estimating Building Costs presents state-of-the-art principles, practices, a*

*This reference outlines the fundamental concepts and strategies for economic assessments for informed management decisions in industry. The book illustrates how to prepare capital cost and operating expense estimates, profitability analyses, and feasibility studies, and how to execute sensitivity and uncertainty assessments. From financial reports to opportunity costs and engineering trade-offs, Process Engineering Economics considers a wide range of alternatives for profitable investing and for projecting outcomes in various chemical and engineering fields. It also explains how to monitor costs, finances, and economic limitations at every stage of chemical project design, preparation, and evaluation.*

*In these pages is all the information that you, manager, engineer, or other technical professional-would need to select, size, and estimate "budget/study" level capital and annual costs for a variety of Air Pollution control equipment. This equipment includes wet scrubbers, carbon adsorbers, and other "add-on" devices. This book also deals with such nonstack controls as wet dust suppression systems and flue gas desulfurization systems. The book is current (1988 or 1989 dollars) and is mainly presented in equational form for ease of computerization and updating. Clear, comprehensive equipment sizing procedures are also detailed. Finally, several detailed example problems are included to illustrate the sizing and costing procedures. This book is not just for technical personnel, however. The material is easy to grasp and use. Anyone with an air pollution control background can follow and apply the procedures and data herein. Using this book, air pollution control professionals can now develop sound, defensible (within ±30% cost estimates with a minimum of time and effort.*

*This text covers the design of food processing equipment based on key unit operations, such as heating, cooling, and drying. In addition, mechanical processing operations such as separations, transport, storage, and packaging of food materials, as well as an introduction to food processes and food processing plants are discussed. Handbook of Food Processing Equipment is an essential reference for food engineers and food technologists working in the food process industries, as well as for designers of process plants. The book also serves as a basic reference for food process engineering students. The chapters cover engineering and economic issues for all important steps in food processing. This research is based on the physical properties of food, the analytical expressions of transport phenomena, and the description of typical equipment used in food processing. Illustrations that explain the structure and operation of industrial food processing equipment are presented. style="font-size: 13.33333015419px;">*The materials of construction and fabrication of food processing equipment are covered here, as well as the selection of the appropriate equipment for various food processing operations. Mechanical processing equipment such as size reduction, size enlargement, homogenization, and mixing are discussed. Mechanical separations equipment such as filters, centrifuges, presses, and solids/air systems, plus equipment for industrial food processing such as heat transfer, evaporation, dehydration, refrigeration, freezing, thermal processing, and dehydration, are presented. Equipment for novel food processes such as high pressure processing, are discussed. The appendices include conversion of units, selected thermophysical properties, plant utilities, and an extensive list of manufacturers and suppliers of food equipment.**

*Heat Transfer Design Methods*

*SI Edition*

*Evaluating Costs of Air Pollution Control*

*Chemical Processing Handbook*

*Health Care Financing Review*

*Volume 37 - Pipeline Flow: Basics to Piping Design*

*This encyclopedic volume covers almost every phase of piping design - presenting procedures in a straightforward way. Written by 82 world experts in the field, the Piping Design Handbook: details the basic principles of piping design, explores pipeline shortcut methods in an in-depth manner; and presents expanded rules of thumb for the piping design*

*The proceedings in this work present 60 papers on mine and mill tailings and mine waste, as well as current and future issues facing the mining and environmental communities. This includes matters dealing with technical capabilities and developments, regulations, and environmental concerns.*

*Covers practically the whole gamut of practical methods of design in almost every facet of heat transfer situations. Each section is prepared by a world expert in that particular area in such a manner as to be readily understood and applied. Following a detailed discussion of the basic principles an*

*""Written by engineers for engineers (with over 150 International Editorial Advisory Board members),this highly lauded resource provides up-to-the-minute information on the chemical processes, methods, practices, products, and standards in the chemical, and related, industries.*

*Fundamentals of Real Estate Appraisal*

*Techniques, Models, and Applications*

*Analysis, Synthesis and Design of Chemical Processes*

*Evaluating Costs of Operations in Manufacturing and Service Industries*

*Handbook of Food Processing Equipment*

*Technology, Economics, and Markets, Sixth Edition*

*Written by a cost-control expert with more than thirty years of design and building expertise, this volume in the Professional Practice Essentials Series gives you practical, user-friendly guidance on how to better manage costs through all phases of a project. Dell'Isola first explains the basics of cost management-from estimating costs during the design phase to managing costs during construction and even after occupancy. He then covers all of the tools and techniques available to architects/designers and explains how best to use them. A number of useful case studies clearly show how the author's principles work in real-life situations.*

*Designed as a day-to-day resource for practitioners, and a self-study guide for the AACE International Cost Engineers' certification examination. This third edition has been revised and expanded, and topics covered include project evaluation, project management, and planning and scheduling.*

*A detailed reference for the practicing engineer, Air Pollution Control Technology Handbook, Second Edition focuses on air pollution control systems and outlines the basic process engineering and cost estimation required for its design. Written by seasoned experts in the field, this book offers a fundamental understanding of the factors resulting in air pollution and covers the techniques and equations used for air pollution control. Anyone with an engineering or science background can effectively select techniques for control, review alternative design methods and equipment proposals from vendors, and initiate cost studies of control equipment using this book. This second edition of a bestseller includes new methods for designing control equipment, enhanced material on air pollution science, updates on major advances in the field, and explains the importance of a strategy for identifying the most cost-effective design. The book also covers: New legislation and updates on air regulation New advances in process integration design techniques The atmospheric and health effects of air pollution Air Pollution Control Technology Handbook, Second Edition helps combat the solution problem with extensive coverage of air pollution control processes. Fully updated with new legislation, air regulations, and extensive reviews of the design of control equipment, this book serves as an ideal reference for industry professionals or anyone with an engineering or science background needing a basic introduction to air pollution control equipment design.*

*Fundamentals of Real Estate Appraisal, 8th Edition contains all the tools you need to understand today's ever-changing appraisal marketplace. The book includes: An Internet Appendix containing Web site addresses useful for all appraisers; Free Appraise-It software for hands- on practice; filling out electronic appraisal forms; and over 65 exercises and 15 Achievement exams to test your appraisal knowledge. Pass your exam the first time with this study guide designed specifically for the appraisal licensing exam.*

*Energy Resource Assessment*

*Tools for Managing Project Costs*

*Biorefineries and Chemical Processes*

*Kern's Process Heat Transfer*

*Production Economics*

*Volume 1 (In Two Volumes)*

*This reference covers both conventional and advanced methods for automatically controlling dynamic industrial processes.*

*This fully updated textbook is intended for the economic geologist who deals with the evaluation of deposits at an early stage of development. It offers rules for quick and easy calculations based on the application of approximate data. It provides both the student and the geologist in the field with a complete set of rules and methods enabling them to perform a quick initial evaluation of the deposit without the support of specialists or computers - even if he is left to his own resources. All rules for calculations are illustrated with examples, and mistakes and pitfalls the authors encountered during their careers are pointed out.*

*This work focuses on the application of fundamental cost engineering principles to the capital and operating costs estimation of major projects. It provides detailed coverage of profitability, risk, and sensitivity analysis. This third edition: discusses novel strategies for calculating preliminary estimates using MasterFormat; presents new informa*

*Written by more than 40 world renowned authorities in the field, this reference presents information on plant design, significant chemical reactions, and processing operations in industrial use - offering shortcut calculation methods wherever possible.*

*Evaluation and Funding of Capital Projects*

*Proceedings of the 9th International Conference, Fort Collins, Colorado,*

*Life Cycle Costing*

*Food Plant Economics*

*Hydrometallurgy*

*Design, Integration and Sustainability Analysis*

*Written by engineers for engineers (with over 150 International Editorial Advisory Board members),this highly lauded resource provides up-to-the-minute information on the chemical processes, methods, practices, products, and standards in the chemical, and related, industries.*

*Offers coverage of each important step in engineering cost control process, from project justification to life-cycle costs. The book describes cost control systems and shows how to apply the principles of value engineering. It explains estimating methodology and the estimation of engineering, engineering equipment, and construction and labour costs*

*"Waste: Nuclear Reprocessing and Treatment Technologies to Waste, Solid, Trash Facts"*

*With flair and an originality of approach, Crundwell brings his considerable experience to bear on this crucial topic. Uniquely, this book discusses the technical and financial aspects of decision-making in engineering and demonstrates these through case studies. It's a hugely important matter as, of course, engineering solutions and financial decisions are intimately tied together. The best engineering opportunities, challenges and problems. To get your project approved, no matter the size of it, the financial case must be clear and compelling. This book provides a framework for engineers and scientists to undertake financial evaluations and assessments of engineering or production projects.*

*Volume 48 - Residual Refining and Processing to Safety: Operating Discipline*

*Preliminary Chemical Engineering Plant Design*

*The Engineer's Cost Handbook*