

Industrial Gas Handbook Gas Separation And Purification

Industrial Gas Handbook Separation of Gases Petroleum Engineering Handbook Membrane Gas Separation Metal-Organic Frameworks Solid-Gas Separation Handbook of Powder Technology. - 3: Solid-gas Separation Advanced Energy Saving and its Applications in Industry Industrial Gas Separations Nanostructured Materials for Next-Generation Energy Storage and Conversion Solid-gas Separation Industrial Chemical Process Analysis and Design Gas Engineers Handbook Perry's Chemical Engineers' Handbook, 9th Edition Fownes' Manual of Chemistry, Theoretical and Practical Perry's Chemical Engineers' Handbook, Eighth Edition PERRY'S CHEMICAL ENGINEER'S HANDBOOK 8/E SECTION 16 ADSORPTION&ION EXCH.. (POD) Reactor Handbook: Fuel reprocessing, edited by S.M. Stoller and R.B. Richards A Manual of Inorganic Chemistry ...: The non-metals Handbook of Membrane Separations Frank G. Kerry W. H. Isalski Howard B. Bradley Benny Freeman David Farrusseng Ladislav Svarovsky Kazuo Matsuda Thaddeus E. Whyte Ying-Pin Chen Ladislav Svarovsky Mariano Martín Martín American Gas Association Don W. Green George Fownes Don W. Green Don W. Green Thomas Edward Thorpe Anil Kumar Pabby Industrial Gas Handbook Separation of Gases Petroleum Engineering Handbook Membrane Gas Separation Metal-Organic Frameworks Solid-Gas Separation Handbook of Powder Technology. - 3: Solid-gas Separation Advanced Energy Saving and its Applications in Industry Industrial Gas Separations Nanostructured Materials for Next-Generation Energy Storage and Conversion Solid-gas Separation Industrial Chemical Process Analysis and Design Gas Engineers Handbook Perry's Chemical Engineers' Handbook, 9th Edition Fownes' Manual of Chemistry, Theoretical and Practical Perry's Chemical Engineers' Handbook, Eighth Edition PERRY'S CHEMICAL ENGINEER'S HANDBOOK 8/E SECTION 16 ADSORPTION&ION EXCH.. (POD) Reactor Handbook: Fuel reprocessing, edited by S.M. Stoller and R.B. Richards A Manual of Inorganic Chemistry ...: The non-metals Handbook of Membrane Separations Frank G. Kerry W. H. Isalski Howard B. Bradley Benny Freeman David Farrusseng Ladislav Svarovsky Kazuo Matsuda Thaddeus E. Whyte Ying-Pin Chen Ladislav Svarovsky Mariano Martín Martín American Gas Association Don W. Green George Fownes Don W. Green Don W. Green Thomas Edward Thorpe Anil Kumar Pabby

drawing on frank g kerry s more than 60 years of experience as a practicing engineer the industrial gas handbook gas separation and purification provides from the trenches advice that helps practicing engineers master and advance in the field it offers detailed discussions and up to date approaches to process cycles for cryogenic separation of

the monograph consists of ten chapters with three basic themes first gas separation technology is introduced and the sources and uses of industrial gases are described the second part includes a description of those industries which use gas separation and an analysis of the gas separation processes themselves the last part describes the plant hardware and its design

gas separation membranes offer a number of benefits over other separation technologies and they play an increasingly important role in reducing the environmental impacts and costs of many industrial processes this book describes recent and emerging results in membrane gas separation including highlights of nanoscience and technology novel polymeric and inorganic membrane materials new membrane approaches to solve environmental problems e g greenhouse gases aspects of membrane engineering and recent achievements in industrial gas separation it includes hyperbranched polyimides amorphous glassy polymers and perfluorinated copolymers nanocomposite mixed matrix membranes polymeric magnetic membranes sequestration of co2 to reduce global warming industrial applications of gas separation developed from sessions of the most recent international congress on membranes and membrane processes membrane gas separation gives a snapshot of the current situation and presents both fundamental results and applied achievements

an international and interdisciplinary team of leading experts from both academia and industry report on the wide range of hot applications for mofs discussing both the advantages and limits of the material the resulting overview covers everything from catalysis h2 and ch4 storage and gas purification to drug delivery and sensors from the contents design of porous coordination polymers metal organic frameworks past present and future design of functional metal organic frameworks by post synthetic modification thermodynamic methods for prediction of gas separation in flexible frameworks separation and purification of gases by mofs opportunities for mofs in co2 capture from flue gases natural gas and syngas by adsorption manufacture of mof thin films on structured supports for separation and catalysis research status of metal organic frameworks for on board cryo adsorptive hydrogen storage applications separation of xylene isomers metal organic frameworks as catalysts for organic reactions biomedical applications of metal organic frameworks metal organic frameworks for biomedical imaging luminescent metal organic frameworks deposition of thin films for sensor applications industrial mof synthesis mof shaping and immobilisation a must have for every scientist in the field

solid gas separation presents a brief and highly technical account of the principles and technology of gas cleaning the book deals with three associated aspects of gas cleaning the relevant dimensionless groups the efficiency of separation and the economics of gas cleaning the text begins with the discussion of the principles of particle separation and classification of equipment general characteristics of equipment and dimensionless groups for modeling and equipment scale up subsequent chapters are devoted to the examination of the efficiency of separation aero mechanical dry separators scrubbers electrostatic precipitators and filters the last chapter deals with the economics of gas cleaning equipment selection environmental and industrial engineers will find the text very useful

the conventional approach for energy saving in a process system is to maximize heat recovery without changing any process conditions by using pinch technology self heat recuperation technology was developed to achieve further energy saving in the process system by eliminating the necessity for any external heat input such as firing or imported steam advanced energy saving and its applications in industry introduces the concept of self heat recuperation and the application of such technology to a wide range of processes from heavy chemical complexes to other processes such as drying and gas separation processes which require heating and cooling during operation conventional energy saving items in a utility system are applied and implemented based on a single site approach however when looking at heavy chemical complexes it was apparent that the low grade heat discharged as waste from a refinery could also be used in an adjacent petrochemical plant there could therefore be a large energy saving potential by utilizing the surplus heat across the sites advanced energy saving and its applications in industry assesses conventional approaches to industrial energy saving and explains and outlines new methods to provide even greater energy saving potential advanced energy saving and its applications in industry provides a key resource and research tool for all those involved in developing the energy efficiency of industrial processes researchers industry professionals and even students with an interest in green engineering will find the summaries of the conventional and suggested new methods useful when attempting to advance further development within this field

good no highlights no markup all pages are intact slight shelfwear may have the corners slightly dented may have slight color changes slightly damaged spine

volume 1 of a 4 volume series is a concise authoritative and an eminently readable and enjoyable experience related to hydrogen production storage and usage for portable and stationary power although the major focus is on hydrogen discussion of fossil fuels and nuclear power is also presented where appropriate this monograph is written by recognized experts in the field and is both timely and appropriate as this decade will see application of hydrogen as an energy carrier for example in transportation sector the world's reliance on fossil fuels is due to the ever growing need for energy to sustain life and on going progress however exploitation also brings consequences such as emission of carbon nitrogen and sulfur dioxides into the atmosphere the collective influence of these photochemical gases is production of acid rain and an alteration of global temperatures leading to record high temperatures in many parts of the world the fossil fuel is unsustainable and thus there is a critical need for alternative sustainable energy resources one universal energy carrier is hydrogen which is the focus of this volume this book is suitable for those who work in the energy field as technical experts including engineers and scientists as well as managers policy and decision makers environmentalists and consultants students and practitioners such as lectures teachers legislators and their aids in the field of energy will find this book invaluable and a practical handbook or guide in the field of sustainable energy with emphasis on hydrogen as an energy carrier

industrial chemical process analysis and design second edition uses chemical engineering principles to explain the transformation of basic raw materials into major chemical products the book discusses traditional processes to create products like nitric acid sulphuric acid ammonia and methanol as well as more novel products

like bioethanol and biodiesel in addition to providing full code and datasets for download detailed discussion of advanced in technology this edition also contains three new chapters firstly covering polymers including h and l d pe pmma pc biobased and full analysis of each including full code for modelling across popular software secondly evaluating phosphoric acid production and fertilizers and finally the third new chapter focuses on blast furnaces outlining not only the traditional technologies using c as reducing agent but also analysis of novel technologies using hydrogen this book will be a comprehensive guide to students and academics working with the latest techniques in process optimization at graduate level and above including some upper undergraduate researchers this book will also be very valuable for academics looking to teach or lecture in chemical process engineering this books will also be a very useful resource for anyone within the process industry to introduce the analysis of novel technologies as well as the modelling examples including recent software such as python gproms or even excel or matlab to solve reactor modelling and units operation but also process simulators applied to typical chemical processes integrates principles of chemical engineering unit operations and chemical reactor engineering to understand process synthesis and analysis includes historical perspectives and traces the improving efficiencies of commercially important chemical production processes provides a systematic analysis of the processes building on thermodynamics kinetics mass and energy balances reactor engineering and unit operations details different software packages to solve the examples from general purpose ones such as excel or new ones like python to specialized ones such as process simulators chemcad or gproms features worked examples and end of chapter problems with solutions to show the application of concepts discussed in the text

this giant reference sponsored by the american gas association and written by a staff of 150 specialists answers any general or specific engineering information requirement in regard to natural liquefied petroleum and manufactured gases it presents in concise orderly fashion all working facts and data on fuel gases needed by engineers industry and government personnel the handbook brings together in one volume and 125 chapters all conceivable engineering methods and operating data of the entire gas industry from source to burner tables graphs charts equations and illustrations clarify and illuminate a text that is crammed with the kind of information that is virtually unobtainable elsewhere

up to date coverage of all chemical engineering topics from the fundamentals to the state of the art now in its 85th anniversary edition this industry standard resource has equipped generations of engineers and chemists with vital information data and insights thoroughly revised to reflect the latest technological advances and processes perry s chemical engineers handbook ninth edition provides unsurpassed coverage of every aspect of chemical engineering you will get comprehensive details on chemical processes reactor modeling biological processes biochemical and membrane separation process and chemical plant safety and much more this fully updated edition covers unit conversion factors and symbols physical and chemical data including prediction and correlation of physical properties mathematics including differential and integral calculus statistics optimization thermodynamics heat and mass transfer fluid and particle dynamics reaction kinetics process control and instrumentation process economics transport and storage of fluids heat transfer operations and equipment psychrometry

evaporative cooling and solids drying distillation gas absorption and gas liquid system design liquid liquid extraction operations and equipment adsorption and ion exchange gas solid operations and equipment liquid solid operations and equipment solid solid operations and equipment chemical reactors bio based reactions and processing waste management including air wastewater and solid waste management process safety including inherently safer design energy resources conversion and utilization materials of construction

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the handbook of membrane separations chemical pharmaceutical and biotechnological applications provides detailed information on membrane separation technologies as they have evolved over the past decades to provide a basic understanding of membrane technology this book documents the developments dealing with these technologies it explo

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