Gas Treating With Chemical Solvents

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Energy Efficient Solvents for CO2 Capture by Gas-Liquid Absorption
Industrial Gases in Petrochemical Processing
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Alkanes—Advances in Research and Application: 2013 Edition
Gas Sweetening and Processing Field Manual
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Toluene
Gas Treating with Chemical Solvents
Rules of Thumb for Chemical Engineers
Encyclopedia of Chemical Processing and Design
Sustainable Design Through Process Integration
Acid Gas Extraction for Disposal and Related Topics
Green Solvents
Chemical Energy from Natural and Synthetic Gas
Solvent Selectivity for Purification of Natural Gases
Petroleum and Gas Field Processing
Handbook of Liquefied Natural Gas
Contamination Control in the Natural Gas Industry
Food Engineering Handbook, Two Volume Set
Natural Gas Processing from Midstream to Downstream
Deep Eutectic Solvents
Polymer Processing and Properties
Environmental Technologies to Treat Sulfur Pollution
Gas Injection for Disposal and Enhanced Recovery
Scaleup of Chemical Processes
Fundamentals of Petroleum Refining

LEONIDAS DEMARION

Performance and Modeling of a Hot Potassium Carbonate Acid Gas Removal System in Treating Coal Gas

CRC Press

During the First Conference of European Rheologists, which was held in Graz, Austria, in April 1982, the Provisional Committee of European Delegates to the Inter national Committee on Rheology held a meeting to discuss future European activities in the general area of rheol ogy. It was agreed, among other things, that the organ ization of meetings in Europe on specific topics related to rheology would be done in cooperation, so as to avoid conflicts of dates and/or subject areas. Any such meeting, if approved by the Provisional Committee, would be named a European Meeting; the European Societies of Rheology would help the organizers with distribution 6f circulars, membership lists, and any required technical assistance. One of the very first meetings organized within this procedural scheme has been the European Meeting on Polymer Processing and Properties, which was held in Capri, Italy, on June 13-16, 1983. This book constitutes the Proceedings of that meeting.

Carbon Dioxide Capture and Storage

CRC Press

This book reviews and characterises promising single-compound solvents, solvent blends and advanced solvent systems suitable for CO2 capture applications using gas-liquid absorption. Focusing on energy efficient solvents with

minimal adverse environmental impact, the contributions included analyse the major technological advantages, as well as research and development challenges of promising solvents and solvent systems in various sustainable CO2 capture applications. It provides a valuable source of information for undergraduate and postgraduate students, as well as for chemical engineers and energy specialists.

Energy Efficient Solvents for CO2 Capture by Gas-Liquid Absorption CRC Press

This is the fifth volume in a series of books focusing on natural gas engineering, focusing on the extraction and disposal of acid gas. This volume includes information for both upstream and downstream operations, including chapters on modeling, carbon capture, chemical and thermodynamic models, and much more. Written by some of the most well-known and respected chemical and process engineers working with natural gas today, the chapters in this important volume represent the most cutting-edge and state-of-the-art processes and operations being used in the field. Not available anywhere else, this volume is a must-have for any chemical engineer, chemist, or process engineer working with natural gas. There are updates of new technologies in other related areas of natural

gas, in addition to the extraction and disposal of acid gas, including testing, reservoir simulations, acid gas injection, and natural gas hydrate formations. Advances in Natural Gas Engineering is an ongoing series of books meant to form the basis for the working library of any engineer working in natural gas today. Every volume is a must-have for any engineer or library.

Industrial Gases in Petrochemical Processing Gulf Professional Publishing

The first guide to compile current research and frontline developments in the science of process intensification (PI), Re-Engineering the Chemical Processing Plant illustrates the design, integration, and application of PI principles and structures for the development and optimization of chemical and industrial plants. This volume updates professionals on emerging PI equipment and methodologies to promote technological advances and operational efficacy in chemical, biochemical, and engineering environments and presents clear examples illustrating the implementation and application of specific process-intensifying equipment and methods in various commercial arenas.

Gas Purification Elsevier

This massively updated and expanded fifth edition is the most complete, authoritative engineering treatment

of the dehydration and gas purification processes used in industry today. Of great value to design and operations engineers, it gives practical process and equipment design descriptions, basic data, plant performance results, and other detailed information on gas purification processes and hardware. This latest edition incorporates all significant advances in the field since 1985.You will find major new chapters on the rapidly expanding technologies of nitrogen oxide control, with discussions of regulatory requirements and available processes; absorption in physical solvents, covering single component and mixed solvent systems; and membrane permeation, with emphasis on the gas purification applications of membrane units. In addition, new sections cover areas of strong current interest, particularly liquid hydrocarbon treating, Claus plant tail gas treating, thermal oxidation of volatile organic compounds, and sulfur scavenging processes.This volume brings you expanded coverage of alkanolamines for hydrogen sulfide and carbon dioxide removal, the removal and use of ammonia in gas purification, the use of alkaline salt solutions for acid gas removal, and the use of water to absorb gas impurities. The basic technologies and all

significant advances in the following areas are thoroughly described: sulfur dioxide removal and recovery processes, processes for converting hydrogen sulfide to sulfur, liquid phase oxidation processes for hydrogen sulfide removal, the absorption of water vapor by dehydrating solutions, gas dehydration and purification by adsorption, and the catalytic and thermal conversion of gas impurities.

Modeling, Control, and Optimization of Natural Gas Processing Plants

John Wiley & Sons

Commercial development of energy from renewables and nuclear is critical to long-term industry and environmental goals. However, it will take time for them to economically compete with existing fossil fuel energy resources and their infrastructures. Gas fuels play an important role during and beyond this transition away from fossil fuel dominance to a balanced approach to fossil, nuclear, and renewable energies. Chemical Energy from Natural and Synthetic Gas illustrates this point by examining the many roles of natural and synthetic gas in the energy and fuel industry, addressing it as both a "transition" and "end game" fuel. The book describes various types of gaseous fuels and how are they are recovered, purified, and converted to liquid fuels and electricity generation and used for other static and mobile

applications. It emphasizes methane, syngas, and hydrogen as fuels, although other volatile hydrocarbons are considered. It also covers storage and transportation infrastructure for natural gas and hydrogen and methods and processes for cleaning and reforming synthetic gas. The book also deals applications, such as the use of natural gas in power production in power plants, engines, turbines, and vehicle needs. Presents a unified and collective look at gas in the energy and fuel industry, addressing it as both a "transition" and "end game" fuel. Emphasizes methane, syngas, and hydrogen as fuels. Covers gas storage and transport infrastructure. Discusses thermal gasification, gas reforming, processing, purification and upgrading. Describes biogas and bio-hydrogen production. Deals with the use of natural gas in power production in power plants, engines, turbines, and vehicle needs.

Alkanes—Advances in Research and Application: 2013 Edition CRC Press Offering indispensable insight from experts in the field, Fundamentals of Natural Gas Processing, Second Edition provides an introduction to the gas industry and the processes required to convert wellhead gas into valuable natural gas and hydrocarbon liquids products. The authors compile

information from the literature, meeting proceedings, and the

Gas Sweetening and Processing Field Manual CRC Press

Initially considered as a sub-class of ionic liquids, eutectic mixtures are formed by mixtures of low cost, often biodegradable Lewis or Bronsted acids and bases. Eutectic mixtures have gathered a growing scientific interest by the academic and industrial communities as they are interesting for many applications ranging from metal processing to biomass treatment or pharmaceuticals. This volume gathers contributions by some of the most active research groups in the world using eutectic mixtures for applications in separation, extraction or pharmaceutical and medical applications. The different contributions aim at a large overview of the field for these particular applications by reviewing literature data and presenting ground breaking research in the different fields.

Fundamentals of Natural Gas Processing BoD – Books on Demand

Fundamentals of Petroleum Refining presents the fundamentals of thermodynamics and kinetics, and it explains the scientific background essential for understanding refinery operations. The text also provides a detailed introduction to refinery engineering topics, ranging from the basic principles

and unit operations to overall refinery economics. The book covers important topics, such as clean fuels, gasification, biofuels, and environmental impact of refining, which are not commonly discussed in most refinery textbooks. Throughout the source, problem sets and examples are given to help the reader practice and apply the fundamental principles of refining. Chapters 1-10 can be used as core materials for teaching undergraduate courses. The first two chapters present an introduction to the petroleum refining industry and then focus on feedstocks and products. Thermophysical properties of crude oils and petroleum fractions, including processes of atmospheric and vacuum distillations, are discussed in Chapters 3 and 4. Conversion processes, product blending, and alkylation are covered in chapters 5-10. The remaining chapters discuss hydrogen production, clean fuel production, refining economics and safety, acid gas treatment and removal, and methods for environmental and effluent treatments. This source can serve both professionals and students (on undergraduate and graduate levels) of Chemical and Petroleum Engineering, Chemistry, and Chemical Technology. Beginners in the engineering field, specifically in the oil

and gas industry, may also find this book invaluable. Provides balanced coverage of fundamental and operational topics Includes spreadsheets and process simulators for showing trends and simulation case studies Relates processing to planning and management to give an integrated picture of refining

Civil Engineering and Energy-Environment Vol 2

John Wiley & Sons

Although the processing of natural gas is in many respects less complicated than the processing and refining of crude oil, it is equally as necessary before its use by end users. The actual process used to separate oil from natural gas, as well as the equipment that is used, can vary widely. Gas Sweetening and Processing Field Manual provides engineers with the ability to understand and select the most efficient and cost effective method to fit their individual needs. Designed for engineers, technologists, and operations personnel involved in the design and operation of gas processing facilities, the book starts with an explanation of the terms and theories used throughout the industry. This is followed by clear and rigorous exposition of sweetness processes such as Solid Bed Adsorption, Chemical Solvents, Physical Solvents, Distillation, and Gas Permeation. Exercises appear at the conclusion of each

chapter with hints in addition to full solutions. Other topics include Design Procedure, Design Examples, Problems and Practical Solutions, Value of NGL Components, Liquid Recovery Process, Absorption/Lean Oil Process, Joule-Thomson, Refrigeration and Cryogenic (Expansion Turbine) Plants. Chapters involving applications cover Direct Conversion of H2S to Sulfur, Removal of H2S to Meet Pipeline Qualities, Removal of CO2 to Meet Pipeline Qualities and Selection Charts. Engineers and process designers will find this text a valuable guide to gas sweetening process and equipment, both in terms of its application to efficient and cost effective operations. It will prove particularly useful to readers who want a "quick reference" guide to field operations and procedures as well as those readers who wish to increase their knowledge of best practices. Rigorous exposition of all natural gas sweetness processes Equipment and process trouble-shooting techniques Tips for diagnosing and solving equipment and process problems Exercises appear at the conclusion of each chapter

Gas Treating with Chemical Solvents

The shift towards being as environmentally-friendly as possible has resulted in the need for this important volume on the topic of supercritical solvents. Edited by the leading

experts in the field, Professors Walter Leitner and Phil Jessop, this is an essential resource for anyone wishing to gain an understanding of the world of green chemistry, as well as for chemists, environmental agencies and chemical engineers.

Gas Treating Springer Sustainable Design through Process Integration: Fundamentals and Applications to Industrial Pollution Prevention, Resource Conservation, and Profitability Enhancement, Second Edition, is an important textbook that provides authoritative, comprehensive, and easy-to-follow coverage of the fundamental concepts and practical techniques on the use of process integration to maximize the efficiency and sustainability of industrial processes. The book is ideal for adoption in process design and sustainability courses. It is also a valuable guidebook to process, chemical, and environmental engineers who need to improve the design, operation, performance, and sustainability of industrial plants. The book covers pressing and high growth topics, including benchmarking process performance, identifying root causes of problems and opportunities for improvement, designing integrated solutions, enhancing profitability, conserving

natural resources, and preventing pollution. Written by one of the world's foremost authorities in integrated process design and sustainability, the new edition contains new chapters and updated materials on various aspects of process integration and sustainable design. The new edition is also packed with numerous new examples and industrial applications. Allows the reader to methodically develop rigorous targets that benchmark the performance of industrial processes then develop cost-effective implementations Contains state-of-the-art process integration and improvement approaches and techniques including graphical, algebraic, and mathematical methods Covers topics and applications that include profitability enhancement, mass and energy conservation, synthesis of innovative processes, retrofitting of existing systems, design and assessment of water, energy, and water-energy-nexus systems, and reconciliation of various sustainability objectives

Fundamentals of Natural Gas Processing, Third Edition Gulf Professional Publishing Food Engineering Handbook, Two-Volume Set provides a stimulating and up-to-date review of food engineering phenomena. It also addresses the basic and applied principles

of food engineering methods used in food processing operations around the world. Combining theory with a practical, hands-on approach, this set examines the thermophysical properties and modeling of selected processes such as chilling, freezing, and dehydration, and covers the key aspects of food engineering, from mass and heat transfer to steam and boilers, heat exchangers, diffusion, and absorption. Comprised of Food Engineering Handbook: Food Engineering Fundamentals and Food Engineering Handbook: Food Process Engineering, this comprehensive resource: Explains the interactions between different food constituents that might lead to changes in food properties Describes the characterization of the heating behavior of foods, their heat transfer, heat exchangers, and the equipment used in each food engineering method Discusses rheology, fluid flow, evaporation, distillation, size reduction, mixing, emulsion, and encapsulation Provides case studies of solid–liquid and supercritical fluid extraction and food behaviors Explores fermentation, enzymes, fluidized-bed drying, and more Presenting cutting-edge information on new and emerging food engineering processes, Food Engineering Handbook, Two-Volume Set offers

a complete reference on the fundamental concepts, modeling, quality, safety, and technologies associated with food engineering and processing operations today.

Handbook of Natural Gas Transmission and Processing ScholarlyEditions The focus of this book is on the technical factors that are critical to th e design and startup of a commercial manufacturing facility.

Re-Engineering the Chemical Processing Plant Springer Science & Business Media

Alkanes—Advances in Research and Application: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Methane. The editors have built Alkanes—Advances in Research and Application: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Methane in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Alkanes—Advances in Research and Application: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written,

assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Ullmann's Energy Gulf Professional Publishing

This is the fourth volume in a series of books focusing on natural gas engineering, focusing on two of the most important issues facing the industry today: disposal and enhanced recovery of natural gas. This volume includes information for both upstream and downstream operations, including chapters on shale, geological issues, chemical and thermodynamic models, and much more. Written by some of the most well-known and respected chemical and process engineers working with natural gas today, the chapters in this important volume represent the most cutting-edge and state-of-the-art processes and operations being used in the field. Not available anywhere else, this volume is a must-have for any chemical engineer, chemist, or process engineer working with natural gas. There are updates of new technologies in other related areas of natural gas, in addition to disposal and enhanced recovery, including sour gas, acid gas injection, and natural gas hydrate

formations. Advances in Natural Gas Engineering is an ongoing series of books meant to form the basis for the working library of any engineer working in natural gas today. Every volume is a must-have for any engineer or library.

Advances in Natural Gas Technology John Wiley & Sons Contamination Control in the Natural Gas Industry delivers the separation fundamentals and technology applications utilized by natural gas producers and processors. This reference covers principles and practices for better design and operation of a wide range of media, filters and systems to remove contaminants from liquids and gases, enabling gas industry professionals to fulfill diverse fluid purification requirements. Packed to cover practical technologies, diagnostics and troubleshooting methods, this book provides gas engineers and technologists with a critical first-ever reference geared to contamination control. Covers contamination control methods and equipment specific to the natural gas industry Includes guidelines on fundamentals and real-world technologies used today Gives engineers better design and operation with rating methods, standards and case histories

Absorption-Based Post-Combustion Capture of Carbon Dioxide

Springer Nature Liquefied natural gas (LNG) is a commercially attractive phase of the commodity that facilitates the efficient handling and transportation of natural gas around the world. The LNG industry, using technologies proven over decades of development, continues to expand its markets, diversify its supply chains and increase its share of the global natural gas trade. The Handbook of Liquefied Natural Gas is a timely book as the industry is currently developing new large sources of supply and the technologies have evolved in recent years to enable offshore infrastructure to develop and handle resources in more remote and harsher environments. It is the only book of its kind, covering the many aspects of the LNG supply chain from liquefaction to regasification by addressing the LNG industries' fundamentals and markets, as well as detailed engineering and design principles. A unique, well-documented, and forward-thinking work, this reference book provides an ideal platform for scientists, engineers, and other professionals involved in the LNG industry to gain a better understanding of the key basic and advanced topics relevant to LNG projects in operation and/or in planning and development. Highlights the

developments in the natural gas liquefaction industries and the challenges in meeting environmental regulations Provides guidelines in utilizing the full potential of LNG assets Offers advices on LNG plant design and operation based on proven practices and design experience Emphasizes technology selection and innovation with focus on a “fit-for-purpose design Updates code and regulation, safety, and security requirements for LNG applications

Food Engineering Handbook CRC Press

"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. "

Green Solvents II CRC Press

Natural gas is a vital component of the world's supply of energy and an important source of many bulk chemicals and speciality chemicals. It is one of the cleanest, safest, and most useful of all energy sources, and helps to meet the world's rising demand for cleaner energy into the future. However, exploring, producing and bringing gas to the user or converting gas into desired chemicals is a systematical engineering project, and every step requires thorough understanding of gas

and the surrounding environment. Any advances in the process link could make a step change in gas industry. There have been increasing efforts in gas industry in recent years. With state-of-the-art contributions by leading experts in the field, this book addressed the technology advances in natural gas industry.

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