

Sulfonation And Sulfation Processes Chemithon

Substantially revising and updating the classic reference in the field, this handbook 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 Handbook serves a spectrum of individuals, from 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.

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Chemistry of Renewables

Production

The Complete Technology Book on Detergents (2nd Revised Edition)

Sulphonation Technology in the Detergent Industry

Detergents and Pollution: Problems and Technological Solutions, 1972

In to days market, custom formulated surfactants are offered for a wide range of applications. The need for surfactants in detergents, cleaning agents, cosmetics & toiletries is second only to an expanding demand in industrial applications. But even within the non-industrial areas the demands have undergone significant changes in recent years. For example, washing and cleaning temperatures have substantially decreased with increased energy conservation attitudes, and more stringent regulatory requirements in the area of ecology and toxicology are leading to new product profiles. New manufacturing technologies and an increased utilization of natural raw materials also factor into this continuing evolution. These changes and trends have been described in numerous publications. However, a summary and survey of these developments is currently missing. The book presented here "Surfactants in Consumer Products" is intended to close this gap. The editor and authors dedicate this work to Dr. Dr. h.c. Konrad Henkel on the occasion of his 70th birthday. Dr. Henkel, himself a scientist and industrialist, contributed signifi cantly to developments in the surfactant field. In the nineteen-fifties, he initiated the change from soap based detergents to synthetic detergents within Henkel. At the same time, dishwashing detergents utilizing various synthetic surfactants were also developed, and became the basis for modern manual and mechanical dishwashing.

The book discusses the sciences of operations, converting raw materials into desired products on an industrial scale by applying chemical transformations and other industrial technologies. Basics of chemical technology combining chemistry, physical transport, unit operations and chemical reactors are thoroughly prepared for an easy understanding.

Federal supplement. [First Series.]

Advances in Chemical Engineering

Surfactants in Consumer Products

Soap

Handbook of Industrial Chemistry and Biotechnology

Advances in Chemical Engineering^β*OD – Books on Demand*

Mono-Olefins: Chemistry and Technology is a translation from the German and deals with the study of olefins from low ethylene to hexenes and olefins from the high hexenes to eicosenes. The book describes the gaseous or low-boiling olefins and the higher, normally liquid olefins (which have only a minor role in applications in the chemical industry). The olefins are considered important as they are added in the distillation of off-gases in refineries. Although the liquid olefins are used sparingly, these are needed to manufacture lubricants, synthetic detergents, and the higher aliphatic alcohols. The book then explains the three processes used to separate olefin containing mixtures of gases into fractions by the C-number or to convert olefins in the pure state: distillation, absorption, and adsorption. The author then describes the processes in manufacturing carburetor fuel from petroleum and natural gases. Petroleum oil is a mixture of paraffinic, naphthenic, and aromatic hydrocarbons and has no olefins. The text describes the complete process of refining petroleum into different products such as gasoline, kerosene, lubricants, and spotting benzenes. Then the book explains the polymerization of olefins to produce carburetor fuels either by the thermal method or catalytic method. The text notes some research made into double-bond isomerization in mono-olefins and their possible applications. This book is beneficial to industrial chemists, researchers, technical designers, and engineers whose works are related with oil refinery and fossil fuels.

Federal Supplement

Ion-Exchange Membrane Separation Processes

Chemistry and Technology of Surfactants

Ullmann's Encyklopädie der technischen Chemie: Umweltschutz und Arbeitssicherheit

Index of Patents Issued from the United States Patent Office

Since its discovery in 1854, chlorosulfonic acid has demonstrated that it is a truly versatile reagent. It is widely used as a sulfonating and chlorosulfonating agent, particularly of organic compounds, and it provides useful synthetic intermediates for many branches of industry. This book provides a detailed, up to date account of the reactions of chlorosulfonic acid with aliphatic, aromatic and heterocyclic compounds; reactions with elements and inorganic compounds are also discussed, along with the use of the reagent as a powerful acid catalyst, and halogenation and dehydrating agent. Finally, the commercial uses and manufacture of chlorosulfonic acid are reviewed. The detailed coverage in this book, coupled with the many references to recent work, will ensure that it is welcomed as a reference by synthetic chemists in, for example, the pharmaceutical, agrochemical, plastic and detergent industries. Researchers and their students in academia will also find it a valuable addition to their bookshelves.

This textbook introduces the industrial production and processing of natural resources. It is divided into six major topics (fats and oils, carbohydrates, lignin, terpenoids, other natural products, biorefinery), which are divided into a total of 20 chapters. Each chapter is self-contained and therefore a compact learning unit, which can be worked on by students in self-study or presented by lecturers. Clear illustrations, flow diagrams, apparatus drawings and photos facilitate the understanding of the subject matter. All chapters end with a succinct summary, the "Take Home Messages". Each chapter is supplemented by ten short test questions, which can be solved quickly after working through the chapter; the answers are at the end of the book. All chapters contain bibliographical references that focus on essential textbooks and reference works. As a prior knowledge, only basic knowledge of chemistry is required.

Sciences naturelles, techniques et médicales. Section A

Anionic Surfactants

Bulletin Scientifique

A Versatile Reagent

Cases Argued and Determined in the District Courts of the United States and the Court of Claims, with Key Number Annotations

Buku ini menyajikan pengetahuan mengenai Surfaktan yang berasal dari kata Surfactant yang berarti Surface Active Agent, yaitu bahan aktif permukaan yang mempunyai peran sebagai penurun tegangan permukaan antara fasa dan udara dan penurun tegangan antar muka antara dua fasa cair yang berbeda polaritasnya serta berperan sebagai pembentuk dan peningkat kestabilan sistem emulsi. Berdasarkan sifat surfaktan yang demikian maka dalam berbagai industri surfaktan mempunyai fungsi sebagai emulsifier/demulsifier, foaming agent/anti foaming agent, dispersant/flocculant, wetting agent, dan sebagainya. Sifat aktif permukaan yang dimiliki surfaktan memungkinkan dua atau lebih senyawa yang saling tidak bercampur pada kondisi normal menjadi bertedensi untuk saling bercampur homogen. Karenaanya surfaktan banyak diaplikasikan pada berbagai industri seperti industri kosmetika, personal care products, produk pembersih (sabun, deterjen), kertas, cat, perminyakan, dan lain sebagainya.

Filled with updated information, equations, tables, figures, and citations, Environmental Investigation and Remediation: 1,4-Dioxane and Other Solvent Stabilizers, Second Edition provides the full range of information on 1,4-dioxane. It offers passive and active remediation strategies and treatment technologies for 1,4-dioxane in groundwater and provides the technical resources to help readers choose the best methods for their particular situation. This new edition includes all new information on remediation costs and reflects the latest research in the field. It includes new practical case studies to illustrate the concepts presented, including 1,4-dioxane occurrence in Long Island and the Cape Fear watershed in North Carolina. Features: Fully updated throughout to reflect the most recent research on 1,4-dioxane Describes the nature and extent of 1,4-dioxane releases, their regulation, and their remediation in a variety of geologic settings Examines 1,4-dioxane analytical chemistry, its many industrial uses, and 1,4-dioxane occurrence as a byproduct in production of many products Provides ample site data for recent and relevant remediation case studies, and a review of the widely varying regulatory landscape for 1,4-dioxane cleanup levels and drinking water limits Discusses the importance of accounting for contaminant archeology in investigating contaminated sites, and leveraging solvent stabilizers in forensic investigations While written primarily for practicing professionals, such as environmental consultants and attorneys, water utility engineers, and laboratory managers, the book will also appeal to researchers and academics as well. This new edition serves as a highly useful reference on the occurrence, sampling and analysis, and remedial investigation and design for 1,4-dioxane and related contaminants.

Detergent Manufacture, Including Zeolite Builders and Other New Materials

Mono-Olefins

Kent and Riegel's Handbook of Industrial Chemistry and Biotechnology

Handbook of Detergents, Part F

Environmental Investigation and Remediation

The fifth edition of the Kirk-Othmer Encyclopedia of Chemical Technology builds upon the solid foundation of the previous editions, which have proven to be a mainstay for chemists, biochemists, and engineers at academic, industrial, and government institutions since publication of the first edition in 1949. The new edition includes necessary adjustments and modernization of the content to reflect changes and developments in chemical technology.

This sixth part of the multi-volume Handbook of Detergents focuses on the production of surfactants, builders and other key components of detergent formulations, including the various multi-dimensional aspects and implications on detergent formulations and applications domestically, institutionally, in industry and agriculture, with all the environmental consequences involved. Thus, Part F constitutes a comprehensive treatise of this industry production technology, emphasizing the alignment of scientific knowledge and up-to-date technological and technical know-how with the relevant contemporary applied practice. An international effort and industry-academia collaboration, this volume features expert contributions, focusing on the contemporary state-of-the-art concerning the many facets of the production of detergents and surfactants. Thus, the Handbook of Detergents, Part F - Production, deals with the production of anionic, cationic, nonionic, and amphoteric surfactants, key builders, bleaching and whitening agents, enzymes and other components of detergent formulations in different contexts, gauges and related concerns, and discusses various technological procedures of production processes involving the components of surfactants and detergents.

1,4-Dioxane and Other Solvent Stabilizers, Second Edition

Chemistry and Technology

Editorial Board: Herman F. Mark, Chairman, John J. McKetta, Jr. [and] Donald F. Othmer

Chemical Engineering

Unit Process Guide to Organic Chemical Industries

Chemical engineering applications have been a source of challenging optimization problems in terms of economics and technology. The goal of this book is to enable the reader to get instant information on fundamentals and advancements in chemical engineering. This book addresses ongoing evolutions of chemical engineering and provides overview to the sate of the art advancements. Molecular perspective is increasingly important in the refinement of kinetic and thermodynamic molding. As a result, much of the material was revised on industrial problems and their sophisticated solutions from known scientists around the world. These issues were divided in to two sections, fundamental advances and catalysis and reaction engineering. A distinct feature of this text continues to be the emphasis on molecular chemistry, reaction engineering and modeling to achieve rational and robust industrial design. Our perspective is that this background must be made available to undergraduate, graduate and professionals in an integrated manner.

This book is about Sulph(onation) Technology in its technical entirety, aiming at superiority in final product quality, raw material utilisation, sustained plant reliability and safety, minimisation of liquid effluent and gaseous emissions; it is about the total quality of the operation. It will be of value to engineers and chemists who are, or will be, involved in the practical daily operation of sulphonation plants or R&D activities. The book can also be used as a tool for the teacher in preparing final year projects in a chemical engineering curriculum. The book covers sulphonation of

alkylbenzenes, primary alcohols, alcohol ethers, alpha-olefins and fatty acid methyl esters, with a strong emphasis on the sulphur-based S-/air sulphonation technology. The first part deals with raw material specifications, hazards, storage, handling and physical properties. In the following section the process chemistry is discussed, indicating main chemical reactions, undesired parallel and consecutive reactions, exothermal heat effects and all other process chemistry data that are relevant for process selection and equipment design. The section about the actual process equipment from the various plant equipment suppliers (Ballestra, Chemithon, Mazzoni, Meccaniche Modeme and Lion Corp.) takes into account the chemical reaction engineering aspects derived from the sulphonation technology processing chemistry. Product quality, product storage and handling, product safety and physical properties are the contents of the next section. The effluent handling and exhaust gas treatment of the SOair sulphonation technology are further discussed in detail.

Theory, Technology and Application

Kirk-Othmer Encyclopedia of Chemical Technology, Volume 23

Application in Enhanced Oil Recovery

Detergent Manufacture

No general work on the organic derivatives of sulfur trioxide has appeared since the publication of C.M. Suter's basic treatise The Organic Chemistry of Sulfur, which covered the literature through 1941. This book represents an effort to overcome this need The author's approach has been selective, rather than all-inclusive, with the general objective of supplying background information of possible value to the laboratory chemist. Recent trends have been emphasized. Chief among these is the recognition that, although the conventional rules of aromatic orientation are followed under kinetically controlled conditions during sulfonation with sulfuric acid or oleum, these rules are not always followed under conditions that are thermodynamically controlled. This effect is made possible by the reversible nature of the sulfonation reaction, a characteristic which has enough other implications to warrant consideration in a sweparate chapter. Another effect noted increasingly in all aspects of sulfonate preparation, as well as in desulfonation, is the importance of steric requirements. Many examples are noted of the steric assistance or hindrance to be expected in reactions involving moieties as large as sulfur trioxide or sulfite ion. Emphasis is also placed upon recent studies involving the reactions of sulfur trioxide itself, and its various adducts with organic compounds. An effort is made in appropriate cases to bring together isolated facts into possibly meaningful form in such a way as to indicate trends or generalizations.

Today, membranes and membrane processes are used as efficient tools for the separation of liquid mixtures or gases in the chemical and biomedical industry, in water desalination and wastewater purification. Despite the fact that various membrane processes, like reverse osmosis, are described in great detail in a number of books, processes involving ion-exchange membranes are only described in a fragmented way in scientific journals and patents; even though large industrial applications, like electro dialysis, have been around for over half a century. Therefore, this book is emphasizing on the most relevant aspects of ion-exchange membranes. This book provides a comprehensive overview of ion-exchange membrane separation processes covering the fundamentals as well as recent developments of the different products and processes and their applications. The audience for this book is heterogeneous, as it includes plant managers and process engineers as well as research scientists and graduate students. The separate chapters are based on different topics. The first chapter describes the relevant Electromembrane processes in a general overview. The second chapter explains thermodynamic and physicochemical fundamentals. The third chapter gives information about ion-exchange membrane preparation techniques, while the fourth and fifth chapter discusses the processes as unit operations giving examples for the design of specific plants. First work on the principles and applications of electro dialysis and related separation processes Presently no other

comprehensive work that can serve as both reference work and text book is available Book is suited for teaching students and as source for detailed information

Soap, Cosmetics, Chemical Specialties

Chlorosulfonic Acid

The United States Patents Quarterly

Chemical Reaction Technology

Pollution Control Review

The Indian detergent industry is about three decades old. An interesting and unique feature of detergent industry in India is the existence of non power operated units which do not use any electrical power for the production of detergent powder. But the production technology of detergents have been changed involving high technique in process control, more skilled personnel and requiring large input. There are various forms of detergents: liquid detergents, paste detergents, solid detergents etc. Whether in liquid or in powdered forms, present detergent products are complex mixtures of several ingredients including performance additives such as bleaches, bleach activators etc. The scope and spectrum of methods and techniques applied in detergent analysis have changed significantly during the last decade. The book outlines features and experimental parameters for many essential procedures, and emphasizes the latest techniques and methods. This book emphasizes practical aspects of detergent production with latest development and other special products based on synthetic surfactants. This book basically deals with the builders, additives and components of detergents, recent developments in surfactant, manufacture of active ingredients for detergents, manufacture of finished detergents, application and formulation of detergents,

packaging of detergents, analysis of detergents, machinery photographs with their suppliers, directory of raw material suppliers etc.. This is an attempt to fill the need of those desirous of starting detergent industry in small scale sector and necessarily contains analytical methods for testing and evaluation of raw as well as final products.

This widely respected and frequently consulted reference work provides a wealth of information and guidance on industrial chemistry and biotechnology. Industries covered span the spectrum from salt and soda ash to advanced dyes chemistry, the nuclear industry, the rapidly evolving biotechnology industry, and, most recently, electrochemical energy storage devices and fuel cell science and technology. Other topics of surpassing interest to the world at large are covered in chapters on fertilizers and food production, pesticide manufacture and use, and the principles of sustainable chemical practice, referred to as green chemistry. Finally, considerable space and attention in the Handbook are devoted to the subjects of safety and emergency preparedness. It is worth noting that virtually all of the chapters are written by individuals who are embedded in the industries whereof they write so

knowledgeably.

Encyclopedia of Chemical Technology

Official Gazette of the United States Patent Office

Ullmann's Encyclopedia of Industrial Chemistry

Sulfonation and Related Reactions

Teknologi surfaktan dan aplikasinya (edisi revisi)

Surfactants are used throughout industry as components in a huge range of formulated products or as effect chemicals in theproduction or processing of other materials. A detailedunderstanding of the basis of their activity is required by allthose who use surfactants, yet the new graduate or postgraduatechemist or chemical engineer will generally have little or noexperience of how and why surfactants work. Chemistry & Technology of Surfactants is aimed at newgraduate or postgraduate level chemists and chemical engineers atthe beginning their industrial careers and those in later life whobecome involved with surfactants for the first time. The

book is straightforward and practical surveys the chemistry ofsurfactants and their uses, providing a basic introduction tosurfactant theory, information on the various types of surfactantsand some application details. This will allow readers to build ontheir scientific education the concepts and principles on which thesuccessful use of surfactants, across a wide range of industries, is based.

This book focuses on the use of natural surfactants in enhanced oil recovery, providing an overview of surfactants, their types, and different physical-chemical properties used to analyse the efficiency of surfactants. Natural surfactants discuss the history of the surfactants, their classification, and the use of surfactants in petroleum industry. Special attention has been paid to natural surfactants and their advantages over synthetic surfactants, including analysing their properties such as emulsification, interfacial tension, and wettability and how these can be used in EOR. This book offers an overview for researchers and graduate students in the fields of petroleum and chemical engineering, as well as oil and gas industry professionals.

An Introduction

Natural Surfactants

Chemical Week

Linear Alpha Olefins and Biodegradable Detergents