Materials Selection For Hydrocarbon And Chemical Plants

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Engineered Materials Handbook, Desk Edition - ASM International. Handbook Committee 1995-11-01
A comprehensive reference on the properties, selection, processing, and applications of the most widely used nonmetallic engineering materials. Section 1, General Information and Data, contains information applicable both to polymers and to ceramics and glasses. It includes an illustrated glossary, a collection of engineering tables and data, and a guide to materials selection. Sections 2 through 7 focus on polymeric materials--plastics, elastomers, polymer-matrix composites, adhesives, and sealants--with the information largely updated and expanded from the first three volumes of the Engineered Materials Handbook. Ceramics and glasses are covered in Sections 8 through 12, also with updated and expanded information. Annotation copyright by Book News, Inc., Portland, OR
Corrosion Inhibitors in the Oil and Gas Industry - Viswanathan S. Saji 2020-06-02
Provides comprehensive coverage of corrosion inhibitors in the oil and gas industries Considering the high importance of corrosion inhibitor development for the oil and gas sectors, this book provides a thorough overview of the most recent advancements in this field. It systematically addresses corrosion inhibitors for various applications in the oil and gas value chain, as well as the fundamentals of corrosion inhibition and interference of inhibitors with co-additives. Corrosion Inhibitors in the Oil and Gas Industries is presented in three parts. The first part on Fundamentals and Approaches focuses on principles and processes in the oil and gas industry, the types of corrosion encountered and their control methods, environmental factors affecting inhibition, material selection strategies, and economic aspects of corrosion. The second part on Choice of Inhibitors examines corrosion inhibitors for acidizing processes, inhibitors for sweet and sour corrosion, inhibitors in refinery operations, high-temperature corrosion inhibitors, inhibitors for challenging corrosive environments, inhibitors for microbiologically influenced corrosion, polymeric inhibitors, vapor phase inhibitors, and smart controlled release inhibitor systems. The last part on Interaction with Co-additives looks at industrial co-additives and their interference with corrosion inhibitors such as antiscalants, hydrate inhibitors, and sulfide scavengers. -Presents a well-structured and systematic overview of the fundamentals and factors affecting corrosion -Acts as a handy reference tool for scientists and engineers working with corrosion inhibitors for the oil and gas industries -Collectively presents all the information available on the development and application of corrosion inhibitors for the oil and gas industries -Offers a unique and specific focus on the oil and gas industries Corrosion Inhibitors in the Oil and Gas Industries is an excellent resource for scientists in industry as well as in academia working in the field of corrosion protection for the oil and gas sectors,

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and will appeal to materials scientists, electrochemists, chemists, and chemical engineers.

CPE. Chemical & Process Engineering - 1967

Directory of Metallurgical Consultants and Translators - 1986

Corrosion and Materials in Hydrocarbon Production - Dr. Bijan Kermani 2019-03-06

Comprehensively covers the engineering aspects of corrosion and materials in hydrocarbon production This book captures the current understanding of corrosion processes in upstream operations and provides a brief overview of parameters and measures needed for optimum design of facilities. It focuses on internal corrosion occurring in hydrocarbon production environments and the key issues affecting its occurrence, including: the types and morphology of corrosion damage; principal metallic materials deployed; and mitigating measures to optimise its occurrence. The book also highlights important areas of progress and challenges, and looks toward the future of research and development to enable improved and economical design of facilities for oil and a gas production. Written for both those familiar and unfamiliar with the subject—and by two authors with more than 60 years combined industry experience—this book covers everything from Corrosion Resistant Alloys (CRAs) to internal metal loss corrosion threats, corrosion in injection systems to microbiologically influenced corrosion, corrosion risk analysis to corrosion and integrity management, and more, notably: Comprehensively covers the engineering aspects of corrosion and materials in hydrocarbon production Written by two, renowned experts in the field Offers practical guide to those unfamiliar with the subject whilst providing a focused roadmap to addressing the topics in a precise and methodical manner Covers all aspects of corrosion threat and remedial and mitigation measures in upstream hydrocarbon production applicable to sub-surface, surface, and transportation facilities Outlines technology challenges that need further research as a pre-cursor to moving the industry forward. Operational and Engineering Aspects of Corrosion and Materials in Hydrocarbon Production is an excellent guide for both practicing materials and corrosion engineers working in hydrocarbons production as well as those entering the area who may not be fully familiar with the subject.

Corrosion in Amine Treating Units - Johan van Roij 2021-10-28

Corrosion in Amine Treating Units, Second Edition presents a fully updated resource with a broadened focus that includes corrosion in not only refining operations, but also in oil and gas production. New sections have been added on inhibition, corrosion modeling and metallic coatings. More detailed descriptions of the degradation mechanisms and Integrity Operating Windows (IOW) are now included, as is more in-depth information on guidelines for what sections and locations are most vulnerable to corrosion and how to control corrosion in amine units e.g., using corrosion Loop descriptions and providing indicative integrity operating windows for operation to achieve a suitable life expectance. Provides new insights on the degradation mechanisms occurring in amine treating units and the locations within the unit where they occur Discusses how to mitigate and control corrosion in amine units Provides guidance for setting up corrosion control documents and inspection and maintenance plans for amine treating units

A Guide to Safe Material and Chemical Handling - Nicholas P. Cheremisinoff 2010-04-27

There have been many volumes written that claim to be the most "comprehensive" compendium or handbook on chemical data. These wieldy volumes are often too big and extraneous to be useful to the practicing engineer. This new volume aims to be the most useful "go to" volume for the working engineer, scientist, or chemist who needs quick answers to daily questions about materials or chemicals and doesn't want to go on long searches through voluminous tomes or lengthy internet searches. Covering only the most commonly used chemicals in the most important processes in industry, A Guide to Safe Material and Chemical Handling includes industrial chemicals, such as gases, fuels, and water, which are not incorporated in most "comprehensive" books on materials and chemical properties. Safety plans and procedures that can be

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implemented by any engineer or plant manager by following the easy, step-by-step instructions in the book are also provided.
Handbook of Materials Failure Analysis with Case Studies from the Oil and Gas Industry - Abdel Salam Hamdy Makhlouf 2015-09-01
Handbook of Materials Failure Analysis: With Case Studies from the Oil and Gas Industry provides an updated understanding on why materials fail in specific situations, a vital element in developing and engineering new alternatives. This handbook covers analysis of materials failure in the oil and gas industry, where a single failed pipe can result in devastating consequences for people, wildlife, the environment, and the economy of a region. The book combines introductory sections on failure analysis with numerous real world case studies of pipelines and other types of materials failure in the oil and gas industry, including joint failure, leakage in crude oil storage tanks, failure of glass fibre reinforced epoxy pipes, and failure of stainless steel components in offshore platforms, amongst others. Introduces readers to modern analytical techniques in materials failure analysis Combines foundational knowledge with current research on the latest developments and innovations in the field Includes numerous compelling case studies of materials failure in oil and gas pipelines and drilling platforms
CPE. - 1969-07

Materials Selection for Hydrocarbon and Chemical Plants - Hansen 1996-08-08
Describes the systematic procedure for using process and mechanical design information to select construction materials suitable for a range of chemical and hydrocarbon processing plants. The volume features tables for locating the American Society for Testing and Materials (ASTM) product form specifications for construction materials that have code-allowable design stresses. It analyzes threshold values for degradation phenomena involving thermal damage.
Metals Abstracts - 1996

Separation Technologies for the Industries of the Future - National Research Council 1999-02-08
Separation processesâ€"or processes that use physical, chemical, or electrical forces to isolate or concentrate selected constituents of a mixtureâ€"are essential to the chemical, petroleum refining, and materials processing industries. In this volume, an expert panel reviews the separation process needs of seven industries and identifies technologies that hold promise for meeting these needs, as well as key technologies that could enable separations. In addition, the book recommends criteria for the selection of separations research projects for the Department of Energy's Office of Industrial Technology.
Control of Hazardous Material Spills - 1980

Materials Selection for Process Plants - Russell E. Gackenbach 1960

Cumulative Book Index - 1996
A world list of books in the English language.
Preliminary Chemical Engineering Plant Design - W.D. Baasal 1989-11-30
This reference covers both conventional and advanced methods for automatically controlling dynamic industrial processes.
Materials Performance - 2002

Gas Abstracts - 1995

American Book Publishing Record - 1997

Guidelines for Safe Handling of Powders and Bulk Solids - CCPS (Center for Chemical Process Safety) 2005
Powders and bulk solids, handled widely in the chemical, pharmaceutical, agriculture, smelting, and other industries present unique fire, explosion, and toxicity hazards. Indeed, substances which are practically inert in consolidated form may become quite hazardous when converted to powders and granules. The U.S. Chemical Safety and Hazard Investigation Board is currently investigating dust explosions

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that occured in 2003 at WestPharma, CTA Acoustics, and Hayes-Lemmerz, and is likely to recommend that companies that handle powders or whose operations produce dust pay more attention to understanding the hazards that may exist at their facility. This new CCPS guidelines book will discuss the types of hazards that can occur in a wide range of process equipment and with a wide range of substances, and will present measures to address these hazards.

Hydrocarbon Processing - 1984

Equipment Design Handbook for Refineries and Chemical Plants - Frank L. Evans 1979

Advanced Materials & Processes - 1997

Chemical and Process Engineering - 1962

Corrosion and Materials Selection - Alireza Bahadori 2014-08-11
The petroleum and chemical industries contain a wide variety of corrosive environments, many of which are unique to these industries. Oil and gas production operations consume a tremendous amount of iron and steel pipe, tubing, pumps, valves, and sucker rods. Metallic corrosion is costly. However, the cost of corrosion is not just financial. Beyond the huge direct outlay of funds to repair or replace corroded structures are the indirect costs – natural resources, potential hazards, and lost opportunity. Wasting natural resources is a direct contradiction to the growing need for sustainable development. By selecting the correct material and applying proper corrosion protection methods, these costs can be reduced, or even eliminated. This book provides a minimum design requirement for consideration when designing systems in order to prevent or control corrosion damage safely and economically, and addresses: • Corrosion problems in petroleum and chemical industries • Requirements for corrosion control • Chemical control of corrosive environments • Corrosion inhibitors in refineries and petrochemical plants • Materials selection and service life of materials • Surface preparation, protection and maintainability • Corrosion monitoring - plant inspection techniques and laboratory corrosion testing techniques Intended for engineers and industry personnel working in the petroleum and chemical industries, this book is also a valuable resource for research and development teams, safety engineers, corrosion specialists and researchers in chemical engineering, engineering and materials science.

Corrosion and Materials Selection - Alireza Bahadori 2014-06-24
The petroleum and chemical industries contain a wide variety of corrosive environments, many of which are unique to these industries. Oil and gas production operations consume a tremendous amount of iron and steel pipe, tubing, pumps, valves, and sucker rods. Metallic corrosion is costly. However, the cost of corrosion is not just financial. Beyond the huge direct outlay of funds to repair or replace corroded structures are the indirect costs – natural resources, potential hazards, and lost opportunity. Wasting natural resources is a direct contradiction to the growing need for sustainable development. By selecting the correct material and applying proper corrosion protection methods, these costs can be reduced, or even eliminated. This book provides a minimum design requirement for consideration when designing systems in order to prevent or control corrosion damage safely and economically, and addresses: • Corrosion problems in petroleum and chemical industries • Requirements for corrosion control • Chemical control of corrosive environments • Corrosion inhibitors in refineries and petrochemical plants • Materials selection and service life of materials • Surface preparation, protection and maintainability • Corrosion monitoring - plant inspection techniques and laboratory corrosion testing techniques Intended for engineers and industry personnel working in the petroleum and chemical industries, this book is also a valuable resource for research and development teams, safety engineers, corrosion specialists and researchers in chemical engineering, engineering and materials science.

Book Review Index 1997 Cumulation - Beverly Baer 1997-11
Provides quick access to reviews of books, periodicals, books on tape and

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electronic media representing a wide range of popular, academic, and professional interests. More than 60 publications are indexed, including journals and national general interest publications and newspapers.

Lees' Loss Prevention in the Process Industries - Frank Lees 2012-11-05

Safety in the process industries is critical for those who work with chemicals and hazardous substances or processes. The field of loss prevention is, and continues to be, of supreme importance to countless companies, municipalities and governments around the world, and Lees' is a detailed reference to defending against hazards. Recognized as the standard work for chemical and process engineering safety professionals, it provides the most complete collection of information on the theory, practice, design elements, equipment, regulations and laws covering the field of process safety. An entire library of alternative books (and cross-referencing systems) would be needed to replace or improve upon it, but everything of importance to safety professionals, engineers and managers can be found in this all-encompassing three volume reference instead. The process safety encyclopedia, trusted worldwide for over 30 years Now available in print and online, to aid searchability and portability Over 3,600 print pages cover the full scope of process safety and loss prevention, compiling theory, practice, standards, legislation, case studies and lessons learned in one resource as opposed to multiple sources

Metals Abstracts Index - 1996

Hydrocarbon Processing & Petroleum Refiner - 1955

Chemical Engineering Design - Gavin Towler 2012-01-25

Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design Significantly increased coverage of capital cost estimation, process costing and economics New chapters on equipment selection, reactor design and solids handling processes New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography Increased coverage of batch processing, food, pharmaceutical and biological processes All equipment chapters in Part II revised and updated with current information Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards Additional worked examples and homework problems The most complete and up to date coverage of equipment selection 108 realistic commercial design projects from diverse industries A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for

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downloading from the companion website Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors

Polymer Science and Engineering - National Research Council 1994-01-01

Polymers are used in everything from nylon stockings to commercial aircraft to artificial heart valves, and they have a key role in addressing international competitiveness and other national issues. Polymer Science and Engineering explores the universe of polymers, describing their properties and wide-ranging potential, and presents the state of the science, with a hard look at downward trends in research support. Leading experts offer findings, recommendations, and research directions. Lively vignettes provide snapshots of polymers in everyday applications. The volume includes an overview of the use of polymers in such fields as medicine and biotechnology, information and communication, housing and construction, energy and transportation, national defense, and environmental protection. The committee looks at the various classes of polymersâ€"plastics, fibers, composites, and other materials, as well as polymers used as membranes and coatingsâ€"and how their composition and specific methods of processing result in unparalleled usefulness. The reader can also learn the science behind the technology, including efforts to model polymer synthesis after nature's methods, and breakthroughs in characterizing polymer properties needed for twenty-first-century applications. This informative volume will be important to chemists, engineers, materials scientists, researchers, industrialists, and policymakers interested in the role of polymers, as well as to science and engineering educators and students.

Materials Selection for Hydrocarbon and Chemical Plants - Hansen 2017-11-22

Describes the systematic procedure for using process and mechanical design information to select construction materials suitable for a range of chemical and hydrocarbon processing plants. The volume features tables for locating the American Society for Testing and Materials (ASTM) product form specifications for construction materials that have code-allowable design stresses. It analyzes threshold values for degradation phenomena involving thermal damage.

Philosophical Transactions of the Royal Society of London - 1976

Technology's Harvest - Robert H. Multhaup 1996

Electrochemical and Metallurgical Industry - 1961

Corrosion and Materials in the Oil and Gas Industries - Reza Javaherdashti 2016-04-19

The advancement of methods and technologies in the oil and gas industries calls for new insight into the corrosion problems these industries face daily. With the application of more precise instruments and laboratory techniques as well as the development of new scientific paradigms, corrosion professionals are also witnessing a new era in the way d

Chemical & Process Engineering - 1967

Chemical Engineering Progress - 2005

Essentials of Coating, Painting, and Lining for the Oil, Gas and Petrochemical Industries - Alireza Bahadori 2015-01-06

With the oil and gas industry facing new challenges—deeper offshore installations, more unconventional oil and gas transporting through pipelines, and refinery equipment processing these opportunity feedstocks--new corrosion challenges are appearing, and the oil and gas industry’s infrastructure is only as good as the quality of protection provided and maintained. Essentials of Coating, Painting, and Linings for the Oil, Gas, and Petrochemical Industries is the first guide of its kind to directly deliver the necessary information to prevent and control corrosion for the components on the offshore rig, pipelines underground and petrochemical equipment. Written as a companion to Cathodic Corrosion Protection Systems, this must-have training tool supplies the oil and gas engineer, inspector and manager with the full picture of

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corrosion prevention methods specifically catered for oil and gas services. Packed with real world case studies, critical qualifications, inspection criteria, suggested procedure tests, and application methods, Essentials of Coating, Painting, and Linings for the Oil, Gas and Petrochemical Industries is a required straightforward reference for any oil and gas engineer and manager. Understand how to select, prime and apply the right coating system for various oil and gas equipment and pipelines – both upstream and downstream Train personnel with listed requirements, evaluation material and preparation guides, including important environmental compliance considerations Improve the quality of your equipment, refinery and pipeline with information on repair and rejection principles

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