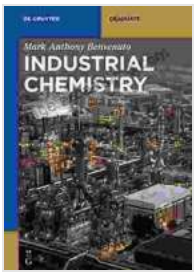
Unveiling the Secrets of Industrial Chemistry: A Comprehensive Guide to Its Principles and Applications



Industrial Chemistry (De Gruyter Textbook)

★★★★★ 5 out of 5

Language : English
Print length : 225 pages
File size : 8194 KB

Embark on a captivating journey into the fascinating realm of industrial chemistry with De Gruyter's comprehensive textbook. This authoritative guide unveils the intricate principles and wide-ranging applications of industrial chemistry, offering an unparalleled understanding of this dynamic field.

Chapter 1: The Foundations of Industrial Chemistry

Lay the groundwork for your industrial chemistry endeavors with a thorough exploration of its fundamental concepts. Understand the nature of chemical reactions, thermochemistry, and chemical equilibrium. Delve into the principles of chemical kinetics and catalysis, gaining insights into the rates and mechanisms of chemical processes.

Chapter 2: The Unit Operations of Industrial Chemistry

Discover the essential unit operations that form the backbone of industrial chemical processes. Learn about fluid flow, heat transfer, and mass transfer. Explore the principles of separation processes such as distillation, extraction, and crystallization. Gain a deep understanding of the equipment and techniques used in industrial settings.

Chapter 3: Chemical Reactors and Process Control

Delve into the heart of industrial chemistry with an in-depth examination of chemical reactors and process control. Understand the different types of reactors, their design, and optimization. Learn about process control

strategies and instrumentation, ensuring the safe and efficient operation of chemical plants.

Chapter 4: Industrial Organic Chemistry

Uncover the vast world of industrial organic chemistry, focusing on the production, properties, and applications of organic chemicals. Explore the principles of organic synthesis, including reaction mechanisms and selectivity. Gain insights into the manufacturing processes of essential organic chemicals such as polymers, pharmaceuticals, and dyes.

Chapter 5: Industrial Inorganic Chemistry

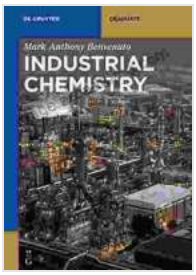
Journey into the realm of industrial inorganic chemistry, delving into the production, properties, and applications of inorganic chemicals. Understand the principles of inorganic synthesis, including redox reactions and coordination chemistry. Explore the manufacturing processes of important inorganic chemicals such as fertilizers, pigments, and catalysts.

Chapter 6: Environmental Aspects of Industrial Chemistry

Address the critical environmental implications of industrial chemistry. Learn about the principles of green chemistry, including waste minimization and sustainable processes. Explore the environmental regulations and standards governing industrial chemical operations. Gain insights into the strategies for reducing the environmental impact of chemical manufacturing.

With its comprehensive coverage, clear explanations, and up-to-date information, De Gruyter's Industrial Chemistry Textbook serves as an indispensable resource for students, researchers, and professionals alike. Whether you are new to industrial chemistry or seeking to deepen your

knowledge, this authoritative guide will empower you with a profound understanding of this dynamic field, enabling you to navigate its challenges and harness its potential.



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