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Industrial Nitrogen Compounds and Explosives Sep 09 2020

High Energy Materials May 18 2021 Authored by an insider with over 40 years of high energy materials (HEMs) experience in academia, industry and defense organizations, this handbook and ready reference covers all important HEMs from the 1950s to the present with their respective properties and intended purposes. Written at an attainable level for professionals, engineers and technicians alike, the book provides a comprehensive view of the current status and suggests further directions for research and development. An introductory chapter on the chemical and thermodynamic basics allows the reader to become acquainted with the fundamental features of explosives, before moving on to the important safety aspects in processing, handling, transportation and storage of high energy materials. With its collation of results and formulation strategies hitherto scattered in the literature, this should be on the shelf of every HEM researcher and developer.

Organic Chemistry of Explosives Mar 28 2022 Organic Chemistry of Explosives is the first text to bring together the essential methods and routes used for the synthesis of organic explosives in a single volume. Assuming no prior knowledge, the book discusses everything from the simplest mixed acid nitration of toluene, to the complex synthesis of highly energetic caged nitro compounds. Reviews laboratory and industrial methods, which can be used to introduce aliphatic C-nitro, aromatic C-nitro, N-nitro, and nitrate ester functionality into organic compounds Discusses the

advantages and disadvantages of each synthetic method or route, with scope, limitations, substrate compatibility and other important considerations Features numerous examples in the form of text, reaction diagrams, and tables.

The Manufacture of Explosives Jan 02 2020

Centralized Database of Explosive Properties Oct 11 2020

Explosive Materials Jun 30 2022 Explosive materials, are substances that contain a great amount of stored energy that can produce an explosion; a sudden expansion of the material after initiation, usually accompanied by the production of light, heat, sound, and pressure. The energy stored in an explosive material may be: chemical energy, such as nitroglycerine or grain dust, pressurised compressed gas, such as a gas cylinder or aerosol can, and nuclear, such as fissile isotopes of uranium-235 and plutonium-239. This book gathers current research in the study of explosive materials from authors around the globe, including the design of energetic materials; detection of post-blast traces of explosive materials using ambient mass spectrometry; tetraazapentalenes and benzofuroxans as explosive materials; and the effects of temperature and humidity on the characterisation of TNT explosive threats.

Manufacture of Explosives Feb 01 2020

Development of Ammonium Nitrate Based Explosives to Optimize Explosive Properties and Explosive Welding Parameters Used During Explosion Cladding Jan 06 2023

Effect of Charge Diameter on Explosive Performance Jul 20 2021

The Manufacture of Explosives. A Theoretical and Practical Treatise on the History the Physical and Chemical Properties and the Manufacture of Explosives Mar 04 2020

EXPLOSIVE PROPERTIES AND HANDLING CHARACTERISTICS OF HNS-I. Feb 24 2022 The

terminating explosive components used with heat resistant mild detonating fuse (MDF) should contain explosives of comparable heat resistant properties. One explosive for this use is hexanitrostilbene (HNS-I). It is sufficiently insensitive to heat, impact, and electrostatic spark to be used in MDF end couplers and end boosters. It has acceptable detonation velocity and sensitivity for these uses.

Explosive Properties of Cyclopropane Nov 11 2020

Primary Explosives May 10 2023 This is the first comprehensive overview of this topic. It serves as a single source for information about the properties, preparation, and uses of all relevant primary explosives. The first chapter provides background such as the basics of initiation and differences between requirements on primary explosives used in detonators and igniters. The authors then clarify the influence of physical characteristics on explosive properties, focusing on those properties required for primary explosives. Furthermore, the issue of sensitivity is discussed. All the chapters on particular groups of primary explosives are structured in the same way, including introduction, physical and chemical properties, explosive properties, preparation and documented use. The authors thoroughly verified all data and information. A unique feature of this book are original microscopic images of some explosives.

Ammonium Nitrate Nov 04 2022

LASL Explosive Property Data Dec 05 2022

The Impact of Blasting Agents and Slurries on Explosives Technology Mar 16 2021 This Bureau of Mines report describes the evolution of modern-day blasting agent and slurry products and the state of the art of the usage of these products as it exists today. The steadily increasing consumption of blasting agents and slurries at the expense of cartridged high-explosive usage is related. Although safety is not covered in depth, reference is made to pertinent safety

literature available. Product formulations, detonation reactions, and detonation products are discussed. Product terminology is defined and the significant differences between the relatively insensitive modern-day dry blasting agents and slurries and cap-sensitive high explosives are described. Blasting agent and slurry properties are discussed, as well as methods of determining and describing these properties, and specific types of products are also discussed with reference to their ingredients, -properties, and field applications. Increasing consumption of slurries, particularly in small-diameter boreholes, and the development of more cap-sensitive varieties of slurries are forecast although dry blasting agents should continue to dominate the market. The consumption of cartridged high explosives will level off or gradually decrease.

The Manufacture of Explosives Oct 23 2021

Nitro-explosives Nov 23 2021

Explosive Properties of Initial Explosives: Crystallographic, Molecular, and Quantumchemical Considerations Sep 02 2022 Contents: A historical review of studies on explosive properties of initial explosives; The synthesis and preparation of initial explosives used in the experiment; The impact sensitivity (mainly in low temperature range) of initial explosives; The thermal sensitivity and activation energy of initial explosives; Ignition sensitivity of initial explosives by means of electric bridge current; The impact sensitivity of initial explosives and the secondary structure of their crystals; Analysis of the crystal structure of mercury fulminate; Studies of the properties and explosion mechanism of mercury fulminate based on the image of its crystal; and Quantum-chemical consideration of explosive properties of initial explosives.

Detonation Properties of Condensed Explosives Computed Using the Becker-Kistiakowsky-Wilson Equation of State Aug

09 2020
ANFO Manual Apr 04 2020
Explosives Engineering Feb 07 2023 This graduate text, and Cooper's companion introductory text ('Introduction to the Technology of Explosives'), serve the same markets as the successful explosives reference by Meyer, now in its 4th edition. VCH also published the International Journal of Propellants, Explosives, and Pyrotechnics. The resulting package would give VCH the major presence in the field. This text presents the basic technologies used in the engineering of explosives and explosive systems, i.e., chemistry, burning, detonation, shock waves, initiation theories, scaling. The book is written for upper-division undergraduate or graduate-level scientists and engineers, and assumes a good grasp of basic physics, chemistry, mechanics and mathematic through calculus. It is based on lecture notes used for graduate courses at the Dept. of Energy Laboratories, and could serve as a core text for a course at schools of mining or military engineering. The intent of the book is to provide the engineer or scientist in the field with an understanding of the phenomena involved and the engineering tools needed to solve/ design/ analyze a broad range of real problems.
Demystifying Explosives Sep 21 2021 Demystifying Explosives: Concepts in High Energy Materials explains the basic concepts of and the science behind the entire spectrum of high energy materials (HEMs) and gives a broad perspective about all types of HEMs and their interrelationships. Demystifying Explosives covers topics ranging from explosives, deflagration, detonation, and pyrotechnics to safety and security aspects of HEMS, looking at their aspects, particularly their inter-relatedness with respect to properties and performance. The book explains concepts related to the molecular structure of HEMs, their properties, performance parameters, detonation and shock

waves including explosives and propellants. The theory-based title also deals with important (safety and security) and interesting (constructive applications) aspects connected with HEMs and is of fundamental use to students in their introduction to these materials and applications. Explains the concept of high energy materials in simple language and down-to-earth examples Worked examples and problems are given wherever required Demystifies the concept of explosives Limited use of big and complex equations Questions and Suggested Reading are given at the end of each chapter

Mining and Industrial Applications of Low Density Explosives Aug 21 2021 This monograph details results of investigations into the use of a new type of low-density industrial explosives. Their working properties and effectiveness in rock fragmentation are highlighted, and the methods and devices for the preparation and safe use of low-density explosives are described.

Gas, Dust and Hybrid Explosions Apr 16 2021 Damaging accidental explosions are a continuous threat to industry. Categories for such explosions include combustible dust explosions; reactive gas explosions, both confined and unconfined; hybrid explosions involving both gases and dusts; bursts of pressure vessels and piping; and liquid propellant explosions. This book evaluates the physical processes and resulting blast effects for these types of explosions. Special attention is given to reactive gas explosions, both confined and unconfined. This latter class of explosion has occurred all too frequently in refineries and petrochemical complexes, and is also one of the most difficult to predict and evaluate. Much recent work on this topic is reviewed and summarized. This is the only publication of its kind, to date, that offers such a thorough coverage of these types of industrial explosions. [p] Each class of explosion source is reviewed

separately, first discussing fundamentals, then presenting methods of analysis and testing, and finally giving curves or equations to predict effects of the particular class of explosion. An extensive bibliography is included together with tables of pertinent properties of explosive materials. The text also includes many figures, equations, tables and a keyword index. The book is intended for researchers in the field of characterizing and mitigating industrial explosions. It will also be of interest to engineers, scientists, and insurers involved in processes.

Explosives Jun 18 2021

The Handling of Dangerous Goods ... May 06 2020

LASL Explosive Property Data Jan 14 2021

The Chemistry of Explosives Oct 03 2022 This concise, easy-to-read book outlines the basic principles needed to understand the chemical mechanisms of explosion. Written for students with no previous knowledge of explosives but some understanding of chemical reactions in mind, it takes the reader through the history of explosives and introduces the concepts of high explosives, propellants and pyrotechnics. Covering combustion, deflagration, and detonation; ignition, initiation, and thermal decomposition; thermochemistry, thermodynamics and kinetics, the text includes detailed formulations and reactions presented with thermochemical calculations to aid understanding. This edition includes environmental legislation and its impact on explosives, together with a section on safety hazard tests. It also contains the latest developments in synthesis and manufacturing of explosives. Covering all aspects of the properties of explosives, The Chemistry of Explosives is a unique text which introduces difficult subjects in a readable manner. Ideal for A-level students and new graduates with no previous knowledge of explosive materials, it will also be useful to anyone needing succinct information on the subject,

such as the more experienced chemist in the explosives sector.

High Explosives and Propellants Jun 06 2020 High Explosives and Propellants, Second Edition is a four-part book classified into High Explosives, Blasting Accessories, Application of High Explosives, and Deflagrating and Propellent Explosives. Part I, High Explosives, centers on the general principles, manufacture, design, and assessment of this type of explosive. Part II, Blasting Accessories, describes initiation of explosives and different types of detonators. Part III, Application of High Explosives, deals with the commercial and military applications of high explosives. The last part, Deflagrating and Propellent Explosives, discusses the manufacture, properties, design, and application of propellants.

Energetic Materials Feb 12 2021 Incorporation of particular components with specialized properties allows one to tailor the end product's properties. For instance, the sensitivity, burning behavior, thermal or mechanical properties or stability of energetic materials can be affected and even controllably varied through incorporation of such ingredients. This book examines particle technologies as applied to energetic materials such as propellants and explosives, thus filling a void in the literature on this subject. Following an introduction covering general features of energetic materials, the first section of this book describes methods of manufacturing particulate energetic materials, including size reduction, crystallization, atomization, particle formation using supercritical fluids and microencapsulation, agglomeration phenomena, special considerations in mixing explosive particles and the production of nanoparticles. The second section discusses the characterization of particulate materials. Techniques and methods such as particle size analysis, morphology elucidation and the determination of

chemical and thermal properties are presented. The wettability of powders and rheological behavior of suspensions and solids are also considered. Furthermore, methods of determining the performance of particular energetic materials are described. Each chapter deals with fundamentals and application possibilities of the various methods presented, with particular emphasis on issues applicable to particulate energetic materials. The book is thus equally relevant for chemists, physicists, material scientists, chemical and mechanical engineers and anyone interested or engaged in particle processing and characterization technologies.

Liquid Explosives Aug 01 2022 The book drawing on the author's nearly half a century of energetic materials research experience intends to systematically review the global researches on liquid explosives. The book focuses on the study of the conception, explosion mechanism, properties and preparation of liquid explosives. It provides a combination of theoretical knowledge and practical examples in a reader-friendly style. The book is likely to be interest of university researchers and graduate students in the fields of energetic materials, blasting engineering and mining.

Forensic Investigation of Explosions, Second Edition Dec 13 2020 Now in its second edition, Forensic Investigation of Explosions draws on the editor's 30 years of explosives casework experience, including his work on task forces set up to investigate major explosives incidents. Dr. Alexander Beveridge provides a broad, multidisciplinary approach, assembling the contributions of internationally recognized experts who present the definitive reference work on the subject. Topics discussed include: The physics and chemistry of explosives and explosions The detection of hidden explosives The effect of explosions on structures and persons Aircraft sabotage investigations Explosion scene

investigations Casework management The role of forensic scientists Analysis of explosives and their residues Forensic pathology as it relates to explosives Presentation of expert testimony With nearly 40 percent more material, this new edition contains revised chapters and several new topics, including: A profile of casework management in the UK Forensic Explosives Laboratory, one of the world's top labs, with a discussion of their management system, training procedures, and practical approaches to problem solving Properties and analysis of improvised explosives An examination of the Bali bombings and the use of mobile analytical techniques and mobile laboratories The collection, analysis, and presentation of evidence in vehicle-borne improvised explosive device cases, as evidenced in attacks on US overseas targets This volume offers valuable information to all members of prevention and post-blast teams. Each chapter was written by an expert or experts in a specific field and provides well-referenced information underlying best practices that can be used in the field, laboratory, conference room, classroom, or courtroom.

Effects of Explosive Properties on Free-surface Displacement Pulses and Crater Dimensions Dec 25 2021

Explosives Apr 28 2022 The unrivaled, definitive reference for almost 40 years, this classic work on explosives is now in its seventh, completely revised and updated edition. Some 500 monographic entries, arranged alphabetically, consider the physicochemical properties, production methods, and safe applications of over 120 explosive chemicals. In addition, 70 fuels, additives, and oxidizing agents are discussed as well as the corresponding test methods. Trade, company, and military short names are provided for many of the materials listed, while further key features include a combined index and glossary with terms and abbreviations in English, French, and German, as well as conversion tables and many

literature references. Finally, this indispensable source also contains safety data and transport regulations.

Monsanto Blasting Products May 30 2022

Explosives Apr 09 2023

Introduction to the Technology of Explosives Mar 08 2023 Introduction to the Technology of Explosives Paul W. Cooper and Stanley R. Kurowski Introduction to the Technology of Explosives is a clear and concise survey of the technologies and physical processes involved in explosive phenomena. The book is intended to provide the worker new to the field with sufficient background to understand problems that may arise and to interact intelligently with specialists in the field. The book covers the fundamentals of the chemistry of explosives; the mechanics of burning; sound, shock, and detonation; initiation and initiators; scaling in design and analysis; and off-the-shelf explosive devices. It provides the basic calculational skills needed to solve simple, first-order engineering design problems, and emphasizes the crucial importance of safety considerations. The book contains a broad range of data on explosive materials, and their properties and behavior, along with extensive lists of useful references. Example problems with solutions are provided in each technical area, as are descriptions and analysis of a wide variety of explosive devices. The book concludes with a thorough and comprehensive description of regulatory requirements for the classification, transportation, and storage of explosives, and an extensive guide to explosives safety in plant and test facilities. This book will be of interest to explosives technicians and engineers, government regulators, crime and accident scene investigators, and instructors in military, police, and FBI bomb schools.

Initial Priming Substances for High Explosives (Classic Reprint) Jul 08 2020 Excerpt from Initial Priming Substances

for High Explosives Wohler and Matter (321) investigated the explosive properties and the priming effects of seven explosives besides mercury ful minate. Tests were made to ascertain their expansion in lead blocks, their penetrating effect on lead plates, and the temperature at which they ignited. The results are-given in Table 1. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.
Properties and tests Jan 26 2022

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