

rhodium erowid

rhodium erowid is a term frequently encountered within online psychedelic and chemical substance communities, notably on platforms such as Erowid. This article explores the significance and context of rhodium in relation to Erowid, an extensive resource for information on psychoactive substances. Rhodium, a rare and precious metal, occasionally appears in discussions about chemical catalysts, drug synthesis, and experimental chemistry documented on Erowid. Understanding the connection between rhodium and Erowid provides insight into the broader landscape of chemical research, safety considerations, and user experiences shared within these communities. This article will cover the basics of rhodium, its applications in chemistry, how it relates to substances discussed on Erowid, and the safety and legal aspects surrounding its use. The following sections will provide a detailed overview and practical information relevant to researchers, chemists, and curious individuals interested in rhodium's role as seen through the Erowid lens.

- Overview of Rhodium
- Rhodium's Role in Chemical Synthesis
- Rhodium References on Erowid
- Safety and Handling of Rhodium
- Legal and Regulatory Considerations

Overview of Rhodium

Rhodium is a rare, silver-white metallic element belonging to the platinum group metals. It is highly valued for its exceptional corrosion resistance, high melting point, and catalytic properties. Naturally occurring rhodium is typically found in ores along with other platinum group metals, primarily in South Africa, Russia, and Canada. Due to its rarity and industrial demand, rhodium is among the most expensive precious metals, frequently used in automotive catalytic converters, jewelry plating, and specialized chemical applications.

Physical and Chemical Properties

Rhodium exhibits remarkable resistance to oxidation and corrosion, even at high temperatures. It is highly reflective and has a melting point of approximately 1964°C (3567°F). Chemically, rhodium is inert to most acids and only dissolves in certain aqua regia mixtures. Its ability to act as a catalyst in numerous chemical reactions, including hydrogenation and carbon-carbon bond formation, makes it invaluable in synthetic chemistry and industrial processes.

Industrial and Scientific Applications

In industry, rhodium's primary use is in catalytic converters for automobiles, where it helps reduce harmful emissions by catalyzing the conversion of nitrogen oxides into nitrogen and oxygen. Additionally, rhodium catalysts are employed in the production of acetic acid and hydrogenation reactions. Scientific research utilizes rhodium complexes for developing new synthetic methodologies, including those relevant to pharmaceutical and materials chemistry.

Rhodium's Role in Chemical Synthesis

Rhodium compounds serve as critical catalysts in modern chemical synthesis, particularly in reactions involving complex organic molecules. The metal's ability to facilitate selective bond formations under mild conditions has made it a staple in laboratories focused on fine chemical and drug synthesis.

Common Rhodium Catalysts

- Wilkinson's Catalyst ($\text{RhCl(PPh}_3)_3$): Widely used for hydrogenation of alkenes and alkynes.
- Rhodium(II) acetate: Employed in carbene transfer reactions and cyclopropanations.
- Rhodium complexes with chiral ligands: Utilized in asymmetric synthesis to produce enantiomerically pure compounds.

Applications in Psychoactive Substance Synthesis

While rhodium catalysts are primarily used in pharmaceutical and industrial chemistry, their application in the synthesis of psychoactive substances is documented sporadically on platforms like Erowid. The metal's catalytic properties can facilitate complex transformations needed to produce certain compounds. However, due to the rarity and cost of rhodium, it is less common in illicit or amateur synthesis compared to more accessible catalysts.

Rhodium References on Erowid

Erowid is a comprehensive online database dedicated to compiling user-generated and scientific information on psychoactive substances. Within Erowid's vast repository, rhodium is occasionally mentioned in relation to chemical synthesis techniques, catalyst discussions, and the documentation of novel psychoactive substance production.

Contextual Mentions

References to rhodium on Erowid often appear in:

- Scientific and technical reports describing advanced synthetic routes.
- User experiences and forums discussing the chemistry of certain substances.
- Glossaries and bibliographies providing chemical background on catalysts.

These mentions help provide a more nuanced understanding of the chemical environment surrounding psychoactive substances and the tools used in their synthesis.

Importance for Researchers and Enthusiasts

The inclusion of rhodium-related information on Erowid supports educational efforts by offering insight into catalyst roles in drug synthesis and encourages safer laboratory practices. This information is valuable for chemists seeking to understand the complexities of synthesis pathways or those exploring legal and ethical considerations in chemical experimentation.

Safety and Handling of Rhodium

Handling rhodium and its compounds requires careful attention to safety protocols due to potential chemical hazards and the metal's high value. While elemental rhodium is relatively inert and non-toxic, some rhodium complexes can be hazardous if improperly managed.

Safe Laboratory Practices

- Use of personal protective equipment (PPE) including gloves and eye protection.
- Working in well-ventilated areas or fume hoods when handling rhodium compounds.
- Proper storage of rhodium catalysts in labeled and secure containers to prevent contamination or accidental exposure.

Environmental Considerations

Due to rhodium's scarcity and environmental impact of mining, responsible use and recycling of rhodium materials are essential. Laboratories and industries often implement recovery protocols to recycle rhodium catalysts and minimize waste.

Legal and Regulatory Considerations

The legal status of rhodium itself is generally unregulated as it is a precious metal used in numerous legitimate industries. However, its role in chemical synthesis, particularly involving controlled substances, can intersect with regulatory frameworks governing precursors and catalysts.

Regulation of Chemical Precursors and Catalysts

While rhodium catalysts are not typically controlled substances, their application in the synthesis of psychoactive drugs may fall under legal scrutiny depending on jurisdiction. Authorities may monitor or restrict access to certain chemicals used in illicit drug manufacturing, which can include specialized catalysts.

Compliance and Ethical Use

Researchers and chemists must adhere to local laws and ethical guidelines when acquiring and utilizing rhodium catalysts. Proper documentation, licensing, and transparency are crucial in maintaining compliance and supporting legitimate scientific advancement.

Frequently Asked Questions

What is Rhodium as described on Erowid?

Rhodium on Erowid refers to a rare and valuable chemical element, often discussed in the context of its unique properties and uses rather than as a psychoactive substance.

Does Erowid provide information about Rhodium's psychoactive effects?

No, Erowid primarily focuses on psychoactive substances, and Rhodium is not known to have psychoactive effects; therefore, it is not detailed as a drug or substance of abuse on Erowid.

Why might someone search for 'Rhodium' on Erowid?

Someone might search for Rhodium on Erowid out of curiosity or confusion, possibly mistaking it for a psychoactive compound or seeking information about rare elements and their safety.

Are there any known health risks associated with Rhodium exposure according to Erowid?

Erowid may mention that Rhodium, like many heavy metals, can pose health risks if improperly handled, including potential toxicity, but it is not commonly encountered in consumer contexts.

Is Rhodium discussed in any user reports or experience logs on Erowid?

There are no known user experience reports involving Rhodium on Erowid, as it is not used recreationally or as a psychoactive substance.

Can Rhodium be used as a drug or recreational substance?

No, Rhodium is a precious metal element and does not have any recreational or psychoactive uses documented on Erowid or elsewhere.

What are common real-world uses of Rhodium mentioned on Erowid or similar sources?

Rhodium is widely used in catalytic converters, jewelry plating, and industrial applications due to its corrosion resistance and reflective properties.

How does Erowid categorize Rhodium compared to other substances?

Erowid categorizes Rhodium as a chemical element or metal rather than a psychoactive substance, distinguishing it from the typical content focused on drugs and plants.

Additional Resources

1. Rhodium Erowid: The Alchemist's Guide to Rare Elements

This book delves into the unique properties and applications of rhodium, highlighting its role in modern alchemy and chemistry. It explores historical uses and emerging technologies that utilize this rare metal. Readers will gain insight into the scientific and mystical perspectives surrounding rhodium.

2. The Erowid Chronicles: Exploring Psychedelic Substances and Their Chemistry

A comprehensive guide to the chemistry and effects of various psychedelic substances documented on Erowid. The book provides detailed analyses of chemical compositions, user experiences, and safety protocols. It serves as an essential resource for researchers and enthusiasts alike.

3. *Rare Metals and Their Mystical Applications*

Focusing on rare metals like rhodium, this book examines their cultural, spiritual, and technological significance. It bridges the gap between scientific facts and esoteric traditions, offering readers a well-rounded understanding of these precious elements. Case studies and historical anecdotes enrich the content.

4. *Erowid Experience Vaults: A Journey Through Psychedelic Research*

An anthology of personal narratives and scientific studies collected from the Erowid database. This volume highlights the diverse experiences individuals have had with psychedelic substances, including those involving rare compounds. It emphasizes harm reduction and informed usage.

5. *Rhodium: Catalyst of Innovation and Transformation*

This book explores rhodium's critical role in catalysis and industrial applications, showcasing its impact on environmental technology and manufacturing. Readers will learn about the metal's properties that make it invaluable in chemical reactions. The text also touches on economic and geopolitical aspects.

6. *The Intersection of Chemistry and Consciousness: Insights from Erowid*

Examining how chemical substances influence human consciousness, this book uses Erowid's extensive database as a foundation. It discusses the biochemical mechanisms behind altered states and the cultural contexts of substance use. Philosophical reflections complement the scientific content.

7. *Precious Metals and Psychedelic Science: The Rhodium Connection*

This title investigates the lesser-known connections between precious metals like rhodium and their roles in psychedelic research. It covers emerging studies that utilize these metals in drug synthesis and delivery systems. The book is aimed at advanced readers interested in cutting-edge science.

8. *Erowid and the Future of Psychedelic Pharmacology*

A forward-looking analysis of how Erowid's data can inform pharmaceutical development and policy-making in the realm of psychedelics. It discusses trends, challenges, and the potential for integrating traditional knowledge with modern science. Ethical considerations are also explored.

9. *The Chemistry of Experience: Rhodium and Psychedelic Substances*

This book synthesizes chemical knowledge with user experiences to provide a holistic view of how substances like those involving rhodium affect perception. It includes chapters on synthesis, metabolism, and psychological impact, supported by Erowid's extensive user reports. Ideal for both scientists and curious readers.

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Rhodium: An Erowid Exploration

Ebook Title: Rhodium: Understanding its Properties, Uses, and Potential Risks

Author: Dr. Anya Sharma, PhD (Fictional Author for this example)

Ebook Outline:

Introduction: What is Rhodium? Brief Overview and History.

Chapter 1: Chemical and Physical Properties of Rhodium: Detailed examination of its atomic structure, reactivity, and physical characteristics.

Chapter 2: Rhodium's Industrial Applications: Exploring its uses in catalysis, electronics, and jewelry.

Chapter 3: Rhodium in Research and Emerging Technologies: A look at current and future applications in fields like medicine and energy.

Chapter 4: Safety and Toxicity of Rhodium: Examining potential health risks associated with exposure.

Chapter 5: Rhodium and the Environment: Discussion of its environmental impact and sustainability concerns.

Chapter 6: The Erowid Perspective: User Reports and Anecdotal Evidence (with caveats and critical analysis).

Chapter 7: Legal Aspects and Regulations: Overview of laws and regulations surrounding rhodium.

Conclusion: Summary of key findings and future directions.

Rhodium: An Erowid Exploration

Introduction: Unveiling the Platinum Group Metal

Rhodium (Rh), a lustrous, silvery-white metal belonging to the platinum group, holds a unique position in both industrial applications and, to a lesser extent, in the realm of anecdotal experiences documented on platforms like Erowid. Unlike its more widely known platinum group counterparts such as platinum and palladium, rhodium's profile remains relatively low among the general public. However, its exceptional properties make it indispensable in various high-tech industries and research endeavors. This ebook delves into the multifaceted nature of rhodium, exploring its chemical characteristics, industrial uses, potential health implications, environmental considerations, and the limited, yet intriguing, anecdotal evidence found within the Erowid archive. It's crucial to understand that Erowid reports are subjective and lack the rigor of scientific studies; they are presented here for context and to highlight the need for scientifically validated information.

Chapter 1: Chemical and Physical Properties of Rhodium

Rhodium boasts remarkable chemical inertness, meaning it resists corrosion and oxidation even at high temperatures. Its atomic number is 45, and it's characterized by its high melting point (1964 °C), high density (12.41 g/cm³), and exceptional hardness. Its crystalline structure contributes to its strength and durability. These properties make it resistant to many acids and alkalis, making it a valuable material for applications where chemical stability is paramount. Its catalytic properties, stemming from its ability to readily accept and release electrons, are central to many of its applications. The electron configuration of rhodium ([Kr]4d⁸5s¹) explains its unique reactivity and versatility in chemical reactions.

Chapter 2: Rhodium's Industrial Applications

The most significant use of rhodium lies in its catalytic properties. It's a vital component in automotive catalytic converters, where it facilitates the conversion of harmful pollutants (nitrogen oxides, carbon monoxide, and hydrocarbons) into less harmful substances like nitrogen, carbon dioxide, and water. This plays a crucial role in reducing vehicle emissions and improving air quality. Beyond automotive applications, rhodium catalysts are used extensively in the chemical industry for various processes, including the production of acetic acid, hydrogenation reactions, and the synthesis of fine chemicals. In the electronics industry, rhodium is employed in electrical contacts, due to its excellent conductivity and resistance to wear and tear. Its high reflectivity also makes it useful in specialized mirrors and coatings. Finally, its rarity and brilliance have led to its use in high-end jewelry, often as a plating for white gold.

Chapter 3: Rhodium in Research and Emerging Technologies

Ongoing research explores rhodium's potential in various emerging technologies. Its catalytic activity is being investigated for applications in fuel cells, where it could enhance the efficiency of hydrogen production and conversion. Researchers are also exploring its use in developing novel materials with improved catalytic properties for various chemical processes. Moreover, investigations are underway to assess its potential in medical applications, such as targeted drug delivery and cancer treatment, though these remain largely in the experimental stages. The unique optical properties of rhodium are also being investigated for their potential use in advanced optical devices and sensors.

Chapter 4: Safety and Toxicity of Rhodium

While rhodium is generally considered to have low toxicity compared to some other heavy metals, prolonged or high-level exposure can pose potential health risks. Inhalation of rhodium dust or fumes can cause respiratory irritation, and skin contact may lead to allergic reactions in susceptible individuals. The precise mechanisms of rhodium toxicity are not fully understood, but studies suggest that it can interfere with certain cellular processes. However, the levels of exposure necessary to cause significant health problems are generally much higher than those encountered in typical occupational settings or through environmental exposure. Appropriate safety precautions, such as wearing protective equipment in industrial settings, are crucial to minimize the risks.

Chapter 5: Rhodium and the Environment

The environmental impact of rhodium is primarily associated with its mining and refining processes. These activities can lead to the release of heavy metals and other pollutants into the environment, potentially causing damage to ecosystems. However, rhodium itself does not readily accumulate in the environment due to its low bioavailability. The focus of environmental concerns related to rhodium centers on minimizing the environmental impact of its extraction and processing, employing sustainable mining practices, and developing effective recycling techniques to recover rhodium from spent catalysts and other waste streams. Recycling plays a vital role in reducing the environmental footprint associated with rhodium production.

Chapter 6: The Erowid Perspective: User Reports and Anecdotal Evidence (with caveats and critical analysis)

Erowid contains limited anecdotal reports related to rhodium. It is crucial to understand that this information is not scientifically validated and should be treated with extreme caution. The reports are often subjective, lacking controlled conditions and scientific methodology. Any claims made within these reports should be critically assessed and compared with the established scientific literature on rhodium's properties and effects. The lack of robust scientific data on the effects of rhodium consumption necessitates a cautious approach to interpreting anecdotal accounts.

Chapter 7: Legal Aspects and Regulations

The legal status and regulation of rhodium vary depending on the country and specific application. As a precious metal, it is subject to various regulations related to its trade, import, export, and use. Industrial applications of rhodium are generally subject to environmental regulations aimed at minimizing pollution and ensuring responsible handling. Specific regulations related to the use of rhodium in catalysts and other industrial processes vary considerably across jurisdictions. It's crucial to consult relevant local, national, and international regulations before handling or using rhodium.

Conclusion: A Precious Metal with Broad Applications and Ongoing Research

Rhodium, a remarkable platinum group metal, exhibits unique properties that make it essential in various industries and research fields. Its catalytic activity, high reflectivity, and chemical inertness have led to its wide-ranging applications. While generally considered to have low toxicity, appropriate safety measures should be observed when handling rhodium. Ongoing research continues to explore rhodium's potential in emerging technologies, highlighting its ongoing importance in technological advancement. Understanding its properties, applications, and potential risks is crucial for responsible utilization and for the development of sustainable practices throughout its lifecycle.

FAQs:

1. What is the primary industrial use of rhodium? Its primary use is in automotive catalytic converters.
2. Is rhodium toxic? It has low toxicity compared to other heavy metals, but prolonged exposure can pose risks.
3. What are the environmental concerns related to rhodium? Primarily the environmental impact of its mining and processing.
4. Is rhodium used in jewelry? Yes, it's used as a plating for white gold due to its brilliance and rarity.
5. What is the role of rhodium in catalytic converters? It catalyzes the conversion of harmful pollutants into less harmful substances.
6. What are some emerging applications of rhodium? Fuel cells, targeted drug delivery, and advanced optical devices.
7. Where can I find more information about the safety of rhodium? Consult scientific literature and relevant safety data sheets (SDS).
8. What are the legal regulations surrounding rhodium? These vary depending on the country and application; consult local regulations.
9. What is the significance of Erowid reports on rhodium? They offer anecdotal accounts but lack scientific rigor and should be treated with caution.

Related Articles:

1. Rhodium Catalysis in Organic Chemistry: A deep dive into the various chemical reactions catalyzed by rhodium.
2. The Environmental Impact of Platinum Group Metal Mining: A broad overview of environmental concerns related to the mining of platinum group metals, including rhodium.
3. Automotive Catalytic Converters: Technology and Efficiency: Detailed explanation of the technology behind catalytic converters and the role of rhodium.
4. The Economics of Rhodium: Supply, Demand, and Market Trends: An analysis of the rhodium market and its economic factors.

5. Recycling of Platinum Group Metals: A Sustainable Approach: Focus on recycling methods for rhodium and other platinum group metals.
6. Health Effects of Heavy Metal Exposure: A general overview of the health risks associated with exposure to various heavy metals.
7. Advanced Materials Using Rhodium Alloys: Exploring the properties and applications of alloys containing rhodium.
8. The History of Rhodium Discovery and Applications: Tracing the history of rhodium from its discovery to its current uses.
9. Future Trends in Rhodium Research and Development: Speculating on future applications and research directions for rhodium.

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rhodium erowid: **The Organic Chem Lab Survival Manual** James W. Zubrick, 2020-02-05 Teaches students the basic techniques and equipment of the organic chemistry lab — the updated new edition of the popular hands-on guide. The Organic Chem Lab Survival Manual helps students understand the basic techniques, essential safety protocols, and the standard instrumentation necessary for success in the laboratory. Author James W. Zubrick has been assisting students navigate organic chemistry labs for more than three decades, explaining how to set up the laboratory, make accurate measurements, and perform safe and meaningful experiments. This practical guide covers every essential area of lab knowledge, from keeping detailed notes and interpreting handbooks to using equipment for chromatography and infrared spectroscopy. Now in its eleventh edition, this guide has been thoroughly updated to cover current laboratory practices, instruments, and techniques. Focusing primarily on macroscale equipment and experiments, chapters cover microscale jointware, drying agents, recrystallization, distillation, nuclear magnetic resonance, and much more. This popular textbook: Familiarizes students with common lab instruments Provides guidance on basic lab skills and procedures Includes easy-to-follow diagrams and illustrations of lab experiments Features practical exercises and activities at the end of each chapter Provides real-world examples of lab notes and instrument manuals The Organic Chem Lab Survival Manual: A Student's Guide to Techniques, 11th Edition is an essential resource for students new to the laboratory environment, as well as those more experienced seeking to refresh their knowledge.

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LSD told by a concerned yet hopeful father, organic chemist Albert Hofmann, Ph.D. He traces LSD's path from a promising psychiatric research medicine to a recreational drug sparking hysteria and prohibition. In *LSD: My Problem Child*, we follow Dr. Hofmann's trek across Mexico to discover sacred plants related to LSD, and listen in as he corresponds with other notable figures about his remarkable discovery. Underlying it all is Dr. Hofmann's powerful conclusion that mystical experiences may be our planet's best hope for survival. Whether induced by LSD, meditation, or arising spontaneously, such experiences help us to comprehend the wonder, the mystery of the divine, in the microcosm of the atom, in the macrocosm of the spiral nebula, in the seeds of plants, in the body and soul of people. More than sixty years after the birth of Albert Hofmann's problem child, his vision of its true potential is more relevant, and more needed, than ever.

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rhodium erowid: *Drugs Unlimited* Mike Power, 2014-10-14 The very first thing ever bought or sold on the Internet was marijuana, when Stanford and MIT students used ARPANET to cut a deal in the early '70s. Today, you can order any conceivable pill or powder with the click of a mouse. In *Drugs Unlimited*, Mike Power tells the tale of drugs in the Internet Age, in which users have outmaneuvered law enforcement, breached international borders, and created a massive worldwide black market. But the online market in narcotics isn't just changing the way drugs are bought and sold; it's changing the nature of drugs themselves. Enterprising dealers are using the Web to engage highly skilled foreign chemists to tweak the chemical structures of banned drugs—just enough to create a similar effect and just enough to render them legal in most parts of the world. Drugs are marketed as not for human consumption, but everyone knows exactly how they're going to be used—what they can't know is whether their use might prove fatal. From dancefloors to the offices of apathetic government officials, via social networking sites and underground labs, Power explores this agile, international, virtual subculture that will always be one step ahead of the law.

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mephedrone and the synthetic cannabinoid receptors in 'spice' / 'K2'.

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Discusses structural and physiochemical effects of irradiation and presents techniques to model and monitor radiation events. Describes the use of radiation as a sterilization method in the biomedical, pharmaceutical, and food industries. Examines current topics in the stability and stabilization of polymers exposed to ionizing radiation. Reviews advances in the use of radiation with photosensitive metathesis polymers, chemical amplification, and dry-develop resist technology.

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rhodium erowid: The Rhesus Chart Charles Stross, 2014-07-01 The Hugo Award-winning author of The Delirium Brief reveals the secrets of The Laundry Files in an adventure of Lovecraftian horror and espionage hi-jinks... As a newly appointed junior manager within the Laundry—the clandestine organization responsible for protecting Britain against supernatural threats—Bob Howard is expected to show some initiative to help the agency battle the forces of darkness. But shining a light on what's best left in the shadows is the last thing Bob wants to do—especially when those shadows hide an occult parasite spreading a deadly virus. Traders employed by a merchant bank in London are showing signs of infection—an array of unusual symptoms such as super-strength and -speed, an uncanny talent for mind control, an extreme allergic reaction to sunlight, and an unquenchable thirst for blood. While his department is tangled up in bureaucratic red tape (and Buffy reruns) debating how to stop the rash of vampirism, Bob digs deeper into the bank's history—only to uncover a blood-curdling conspiracy between men and monsters...

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rhodium erowid: Cocaine, 1977 Robert C. Petersen, 1977

rhodium erowid: Modern Solvents in Organic Synthesis Paul Knochel, 2003-07-01 In recent years the choice of a given solvent for performing a reaction has become increasingly important. More and more, selective reagents are used for chemical transformations and the choice of the solvent may be determining for reaching high reaction rates and high selectivities. The toxicity and recycling considerations have also greatly influenced the nature of the solvents used for industrial reactions. Thus, the development of reactions in water is not only important on the laboratory scale but also for industrial applications. The performance of metal-catalyzed reactions in water for example has led to several new hydrogenation or hydroformylation procedures with important industrial applications. The various aspects of organic chemistry in water will be presented in this book. Recently, novel reaction media such as perfluorinated solvents or supercritical carbon dioxide has proven to have unique advantages leading to more practical and more efficient reactions.

Especially with perfluorinated solvents, new biphasic catalyses and novel approaches to perform organic reactions have been developed. These aspects will be examined in detail in this volume. Finally, the performance of reactions in the absence of solvents will show practical alternatives for many reactions. More than ever before, the choice of the solvent or the solvent system is essential for realizing many chemical transformations with the highest efficiency. This book tries to cover the more recent and important new solvents or solvent systems for both academic and industrial applications.

rhodium erowid: Amphetamines and Related Stimulants John Caldwell, S. Joseph Mule, 2019-06-04 First published in 1980: The current texts represent the state-of-the-art on the use and abuse of amphetamines and related stimulants, from chemical, pharmacological, clinical, and social aspects.

rhodium erowid: *Alternative Solvents for Green Chemistry* Francesca Kerton, Ray Marriott, 2015-11-09 Everyone is becoming more environmentally conscious and therefore, chemical processes are being developed with their environmental burden in mind. This also means that more traditional chemical methods are being replaced with new innovations and this includes new solvents. Solvents are everywhere, but how necessary are they? They are used in most areas including synthetic chemistry, analytical chemistry, pharmaceutical production and processing, the food and flavour industry and the materials and coatings sectors. However, the principles of green chemistry guide us to use less of them, or to use safer, more environmentally friendly solvents if they are essential. Therefore, we should always ask ourselves, do we really need a solvent? Green chemistry, as a relatively new sub-discipline, is a rapidly growing field of research. Alternative solvents - including supercritical fluids and room temperature ionic liquids - form a significant portion of research in green chemistry. This is in part due to the hazards of many conventional solvents (e.g. toxicity and flammability) and the significant contribution that solvents make to the waste generated in many chemical processes. Solvents are important in analytical chemistry, product purification, extraction and separation technologies, and also in the modification of materials. Therefore, in order to make chemistry more sustainable in these fields, a knowledge of alternative, greener solvents is important. This book, which is part of a green chemistry series, uses examples that tie in with the 12 principles of green chemistry e.g. atom efficient reactions in benign solvents and processing of renewable chemicals/materials in green solvents. Readers get an overview of the many different kinds of solvents, written in such a way to make the book appropriate to newcomers to the field and prepare them for the 'green choices' available. The book also removes some of the mystique associated with 'alternative solvent' choices and includes information on solvents in different fields of chemistry such as analytical and materials chemistry in addition to catalysis and synthesis. The latest research developments, not covered elsewhere, are included such as switchable solvents and biosolvents. Also, some important areas that are often overlooked are described such as naturally sourced solvents (including ethanol and ethyl lactate) and liquid polymers (including poly(ethyleneglycol) and poly(dimethylsiloxane)). As well as these additional alternative solvents being included, the book takes a more general approach to solvents, not just focusing on the use of solvents in synthetic chemistry. Applications of solvents in areas such as analysis are overviewed in addition to the more widely recognised uses of alternative solvents in organic synthesis. Unfortunately, as the book shows, there is no universal green solvent and readers must ascertain their best options based on prior chemistry, cost, environmental benefits and other factors. It is important to try and minimize the number of solvent changes in a chemical process and therefore, the importance of solvents in product purification, extraction and separation technologies are highlighted. The book is aimed at newcomers to the field whether research students beginning investigations towards their thesis or industrial researchers curious to find out if an alternative solvent would be suitable in their work.

rhodium erowid: **Biology of Kundalini** Jana Dixon, 2020-06-10 2nd Edition: A manual for those going through spiritual journeys and kundalini awakenings. Listing symptoms, practices and health suggestions to reassure the reader that transmutation and the evolutionary process of

metamorphosis is both normal and essential to the deeper experience of being human. Evolutionary biologists and neurologists may find some clues in this book to aid their research.

rhodium erowid: Drugs 2.0 Mike Power, 2014 An eye-opening investigation of the new and constantly-mutating global drug culture that is driven by social networking and rogue chemistry, and enabled by antiquated laws

rhodium erowid: Fundamentals of Carbanion Chemistry Donald J. Cram, 2012-12-02 Organic Chemistry, Volume 4: Fundamentals of Carbanion Chemistry provides information pertinent to carbanion chemistry. This book explores several topics, including carbonium ions, carbanions, carbenes, and carbon radicals. Comprised of six chapters, this volume starts with an overview of the variation of the kinetic and thermodynamic acidities of carbon acids with substituents and environments. This text then explores the methods of carbanion stabilization by substituents and discusses the various types of stabilization. Other chapters explain the stereochemistry of hydrogen-deuterium exchange and examine the stereochemistry of substitution reactions of organometallic compounds. This book discusses as well the structure and immediate environment of reaction intermediates through the use of stereochemical techniques. The final chapter considers the unsaturated anionic rearrangements of carbanions, carbonium ions, as well as carbon radicals and other rearrangements. Chemists, organic chemists, researchers, and graduate students interested in the field of carbanion chemistry will find this book extremely useful.

rhodium erowid: *The Amphetamine Debate* Elaine A. Moore, 2014-01-10 This book covers both sides of the debate over amphetamine prescription and use. It discusses the history of amphetamine and related stimulants; ADHD and the use of Ritalin and Adderall to treat it; related neuroenhancers; methamphetamine from Desoxyn to crystal meth; the nature of addiction and side effects; sociological effects of amphetamine compounds; and expert opinions for and against amphetamine use.

rhodium erowid: Oxidizing and Reducing Agents Steven D. Burke, Rick L. Danheiser, 1999-07-09 Oxidizing and Reducing Agents S. D. Burke University of Wisconsin at Madison, USA R. L. Danheiser Massachusetts Institute of Technology, Cambridge, USA Recognising the critical need for bringing a handy reference work that deals with the most popular reagents in synthesis to the laboratory of practising organic chemists, the Editors of the acclaimed Encyclopedia of Reagents for Organic Synthesis (EROS) have selected the most important and useful reagents employed in contemporary organic synthesis. Handbook of Reagents for Organic Synthesis: Oxidizing and Reducing Agents, provides the synthetic chemist with a convenient compendium of information concentrating on the most important and frequently employed reagents for the oxidation and reduction of organic compounds, extracted and updated from EROS. The inclusion of a bibliography of reviews and monographs, a compilation of Organic Syntheses procedures with tested experimental details and references to oxidizing and reducing agents will ensure that this handbook is both comprehensive and convenient.

rhodium erowid: Pyridines: From Lab to Production Eric F.V. Scriven, 2013-01-08 Pyridines: From Lab to Production provides a synthetic armory of tools to aid the practicing chemist by reviewing the most reliable historical methods alongside new methods/ Written by scientists who have actually used these in synthesis. By emphasizing tricks and tips to optimize reactions for the best yields and purity, which are often missing from the primary literature, this book provides another dimension for the synthetic chemist. A combined academic and industrial approach evaluates the best methods for different scales of reaction and discusses practical tips (e.g. when to stop a reaction early to maximize purity or when to re-use side products). Chapters also assess whether to make or source starting materials, how to connect them and what are the best synthetic routes. The book is designed to be a stand-alone reference, but also provides cross references to leading reviews and the Comprehensive Heterocyclic Chemistry reference works for those who want to learn more. - Reviews tried and tested practical methods to help the reader select the best method for their research - Includes tips, tricks and hints to enable the reader to get the best yield or cleanest product out of their reaction for synthesising or transforming a pyridine derivative -

Written by both academic researchers and industry leaders this provides a unique view of how to get the most out of a reaction no matter what scale you are running this on

rhodium erowid: *The Commemorative Edition of PiHKal and TiHKal* Alexander T. Shulgin, Ann Shulgin, 2018-09 Lovingly prepared by Joshua Marker along with a devoted team of volunteers, this commemorative publication of PiHKAL: A Chemical Love Story and TiHKAL: The Continuation features the original texts enhanced with complete errata, new essays, anecdotes, and reminiscences by numerous colleagues, previously unpublished photographs, and original art. PiHKAL is the fictionalized autobiographical account of Sasha and Ann Shulgin's research and romance, exploring altered state experiences in the context of intimacy. It describes a wide variety of phenethylamines, their dosage, and their effects. The second volume, TiHKAL, uses the same format as its predecessor to describe the effects of a range of tryptamines, and continues the Shulgin's chemical love story. It also includes appendices that relate to cactus alkaloids, natural beta-carbolines, and drug law. In this edition, each book has been split into two paperback volumes to make a collection of four, housed in a commemorative slipcase set.

rhodium erowid: *Opium for the Masses* Jim Hogshire, 1994 Opium. Known as 'The Mother of All Analgesics,' it's probably the greatest pain killer ever discovered. Opium is the parent of morphine, heroin, laudanum, Darvocet, Darvon, and many other pain relievers. Opium causes poets to rhapsodize and nations to go to war. 'Religion... is the opium of the people,' said Karl Marx, but some people insist on the real thing. In *Opium for the Masses*, Jim Hogshire tells you everything you want to know about the beloved poppy and its amazing properties [...] As he reveals the secrets of the seductive opium poppy, he tells the sad story of prescription drugs: doctors, drug makers and governments prohibiting natural remedies in favor of harsh synthetic derivatives. *Opium for the Masses* includes rare photographs and detailed illustrations that bring this magnificent plant to life.--From cover.

rhodium erowid: *Psychotropic Agents* Leo G. Abood, 1980

rhodium erowid: *Drug smuggler nation* Stephen Snelders, 2021-02-09 Why did the international drug regulatory regime of the twentieth century fail to stop an explosive increase in trade and consumption of illegal drugs? This study investigates the histories of smugglers and criminal entrepreneurs in the Netherlands who succeeded in turning the country into the so-called 'Colombia of Europe' or, 'the international drug supermarket'. Increasing state regulations and interventions led to the proliferation of a 'hydra' of small, anarchic groups and networks ideally suited to circumvent the enforcement of regulation. Networks of smugglers and suppliers of heroin, cocaine, cannabis, XTC, and other drugs were organized without a strict formal hierarchy and based on personal relations and cultural affinities rather than on institutional arrangements. These networks created a thriving underground industry of illegal synthetic drug laboratories and indoor cannabis cultivation in the Netherlands itself. Their operations were made possible and developed because of the deep historical social and cultural 'embeddedness' of criminal anarchy in Dutch society. Using examples from the rich history of drug smuggling, *Drug smuggler nation* investigates the deeper and hidden grounds of the illegal drug trade, and its effects on our drug policies.

rhodium erowid: *The Shulgin Index* Alexander Shulgin, Tania Manning, Paul F. Daley, 2011-03-07 The Shulgin Index Vol. I is a comprehensive survey of the known psychedelic phenethylamines. This first volume presents: • A structure-oriented survey of psychedelic phenethylamines, amphetamines, phenylpiperazines, and other similar compounds. • Treatments of 126 main compounds with detailed physical properties, synthesis and analytical chemistry, biochemistry, pharmacological properties, and legal status. Fully referenced with over 2,000 citations. • Sub-tables of lesser-studied structural homologues and analogues. • Over 1300 total compounds covered. • Extensive cross-referencing tables for rapid location of key information. This book is an invaluable resource for researchers, physicians, chemists, and law enforcement.

rhodium erowid: *The Botany and Chemistry of Hallucinogens* Richard Evans Schultes, Albert Hofmann (Chemiker), 1980 By Richard Evans Schultes, Harvard University, Cambridge, Massachusetts, and Albert Hofmann, Basel, Switzerland. With Forewords by I. Newton Kugelmass

and Henrich Kluver. The Second Edition of this book encompasses all of the advances that have been made in this field since publication of the original text. Newly discovered hallucinogenic plants have been incorporated into the discussions along with new information on some well-known drugs. The authors continue to focus on the botany and chemistry of hallucinogens, although they also consider ethnobotanical, historical, pharmacological and psychological aspects. Initial chapters delineate definition, botanical distribution, and structural types of hallucinogenic plants. Plants of known, possible and dubious hallucinogenic potential are then covered in separate sections. The bibliography for this new edition has been enlarged to accommodate all of the recent activity in botanical and chemical investigation of psychoactive plants. Readers will also appreciate the excellent illustrations that accompany the text.

rhodium erowid: Illegal Drugs Paul Gahlinger, 2003-12-30 Does Ecstasy cause brain damage? Why is crack more addictive than cocaine? What questions regarding drugs are legal to ask in a job interview? When does marijuana possession carry a greater prison sentence than murder? **Illegal Drugs** is the first comprehensive reference to offer timely, pertinent information on every drug currently prohibited by law in the United States. It includes their histories, chemical properties and effects, medical uses and recreational abuses, and associated health problems, as well as addiction and treatment information. Additional survey chapters discuss general and historical information on illegal drug use, the effect of drugs on the brain, the war on drugs, drugs in the workplace, the economy and culture of illegal drugs, and information on thirty-three psychoactive drugs that are legal in the United States, from caffeine, alcohol and tobacco to betel nuts and kava kava.

rhodium erowid: Handbook of Psychopharmacology Leslie L. Iversen, Susan D. Iversen, Solomon H. Snyder, 1978

rhodium erowid: Advanced Techniques of Clandestine Psychedelic & Amphetamine Manufacture Fester, Fester (Uncle.), 1998

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