Metals In Mercury Solubility Data Series Vol 25

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Precious Metals 1981 E.D. Zysk 2013-10-22 Precious Metals 1981 presents the significant role of precious noble metals in various aspects of human life. This book discusses the wide array of uses of precious metals from dental fillings to the manufacturing of air conditioners. Organized into nine parts encompassing 48 chapters, this book begins with an overview of the chemical reducing capability of sodium borohydride for various organic heavy metal applications. This text then examines the general plant operations comprising of heap leaching methods utilized for the recovery of finely dispersed particles of gold and silver. Other chapters consider the refining characteristics of gold alloys containing impurities. This book discusses as well the fundamental principles of major conventional bonding methods used to produce metal clad materials used in jewelry and electrical contact applications. The final chapter deals with the precious and non-precious alloy systems used in Dentistry. This book is a valuable resource for engineers, jewelers, and goldsmiths.

Copper, Silver, Gold & Zinc, Cadmium, Mercury Oxides & Hydroxides T. P. Dirkse 2016-01-22 Interest in the title compounds has fallen into three phases: initial study of their solution chemistry, study of their role in the electrode reactions of alkaline batteries during and since World War II, and present concern over the mechanisms by which these elements can enter the environment through dissolution processes, sometimes with toxic results. This volume provides a complete compilation of solubility data published up to 1984, including all pertinent articles, together with critical evaluations of the data. Almost all the measurements relate to aqueous systems.

Mercury Handbook L F Kozin 2013-10-11 This book provides a thorough understanding of amalgam metallurgy which is essential for academics, industrialists and postgraduates working in relevant fields. Guaranteed to bring a wealth of information, this book will be a welcome addition to the literature.

Molten Alkali Metal Alkanoates P. Franzosini 2013-10-22 Most alkali metal alkanoates exhibit polymorphism in the solid state. However, controversy exists about the number, nature and stability range of the polymorphs present in a given solvent. This volume discusses all available solubility data for the title compounds, and includes critical evaluations for all systems considered.

Liquid Metal Systems H.U. Borgstedt 2012-12-06 Liquid metal technology has been the subject of an impetuous development in the recent decades, mainly due to the application of liquid met als in nuclear techniques. The technological development has been supported by studies of the basic physical-chemical properties of liquid metals: One major concern is the material behaviour in contact with the liquid metals, corrosion and the possible deterioration of metallic and ceramic materials which are in use as constructional or functional materials in such systems. Since the corrosion is in many cases not only a simple dissolution process, the chemical background of such processes had to be studied. Such studies included the determination of solubilities of metals and non-metals in liquid metals, the measurement of thermodynamic data of dissolved materials and of chemical equilibria. Several formerly unknown chemical compounds are formed in liquid metal~ lnd are only stable in this environment. The research and deve\opment devoted to the fission reactor techniques were more or less completed in several countries, further work is in progress in some countries in which the interest in fast breeder reactors arose recently. Even the worldwide program on fusion reactor technology is related to liquid metals, and severallaboratories are now contributing to this new technology.

Hydrogen Sulfide, Deuterium Sulfide & Hydrogen Selenide Peter G.T. Fogg 2013-10-22 Published solubility data for the title compounds in pure aqueous, mixed aqueous and non-aqueous solvent systems have been critically evaluated; recommended values are indicated where appropriate. Literature coverage is complete to January 1987. Many of the systems included are used to remove hydrogen sulfide in industrial processes, and industrially important systems including carbon dioxide are also discussed.

Carbon Dioxide in Non-aqueous Solvents at Pressures Less Than 200 KPA P.G.T. Fogg 2013-10-22 Solubility Data Series, Volume 50: Carbon Dioxide in Non-Aqueous Solvents at Pressures Less Than 200 kPa contains evaluated data for the solubility in non-aqueous solvents of carbon dioxide at a partial pressure not greater than 200 kPa. The Solubility Data Series is a project of Commission V.8 (Solubility Data) of the International Union of Pure and Applied Chemistry (IUPAC). The text has as its goal the preparation of a comprehensive and critical compilation of data on solubilities in all physical systems, including gases, liquids and solids. Chapters are devoted to providing data on the solubility of carbon dioxide in compounds such as alkanes, cyclic alkanes and alkenes, alcohols, solvents, other than alcohols, containing carbon, hydrogen and oxygen, and animal and vegetable oils and fats. Chemists will find the text extremely useful.

Alkali Metal Orthophosphates J. Eysseltova 2012-12-02 This volume presents and evaluates reported solubility data for the title compounds, complementing an earlier volume in the IUPAC Solubility Data Series dealing with alkali metal halides. Orthophosphates have been known and used for many years; principal applications include their use in fertilizers, as corrosion inhibitors and in piezoelectric components. Most published data relate to sodium and potassium orthophosphates; introductory chapters on these two systems are followed by chapters dealing with individual phosphates with various metal/phosphorus ratios, together with coverage of ternary and multicomponent systems. In compiling the data, all relevant articles published up to 1984 have been consulted. Critical evaluation of the data has made possible the definition of recommended solubility values.

Handbooks and Tables in Science and Technology Russell H. Powell 1994 Provides a bibliography of more than three thousand handbooks in various aspects of science and technology, from abrasives and band structures to yield strength and zero defects

Laboratory Techniques in Electroanalytical Chemistry, Revised and Expanded Peter Kissinger 2018-10-03 This volume provides a practical, intuitive approach to electroanalytical chemistry, presenting fundamental concepts and experimental techniques without the use of technical jargon or unnecessarily extensive mathematics. This edition offers new material on ways of preparing and using microelectrodes, the processes that govern the voltammetric behavior of microelectrodes, methods for characterizing chemically modified electrodes, electrochemical studies at reduced temperatures, and more. The authors cover such topics as analog instrumentation, overcoming solution resistance with stability and grace in potentiostatic circuits, conductivity and conductometry, electrochemical cells, carbon electrodes, film electrodes, microelectrodes, chemically modified electrodes, mercury electrodes, and solvents and supporting electrolytes.

Alkaline Earth Metal Halates H. Miyamoto 2013-10-22 Solubilities of the chlorates, bromates and iodates of the alkaline earth metals (magnesium, calcium, strontium and barium) in all liquid solvents are presented in tabular format and critically evaluated. This is the first of four volumes in the Series covering the inorganic halates, and provides essential data on these important industrial reagents.

Gas Solubilities William Gerrard 2013-10-22 Gas Solubilities: Widespread Applications discusses several topics concerning the various applications of gas solubilities. The first chapter of the book reviews Henr's law, while the second chapter covers the effect of temperature on gas solubility. The third chapter discusses the various gases used by Horiuti, and the following chapters evaluate the data on sulfur dioxide, chlorine data, and solubility data for hydrogen sulfide. Chapter 7 concerns itself with solubility of radon, thoron, and actinon. Chapter 8 tackles the solubilities of diborane and the gaseous hydrides of groups IV, V, and VI of

the periodic table. Chapter 9 discusses the solubility of gases containing fluorine, while Chapter 10 talks about Hildebrand's theory in the light of all gas solubility data. Chapter 11 covers the hydrogen halide system, while Chapter 12 deals with the solubility of gases in water and aqueous solutions of slats, inorganic acids and bases, and organic compounds. Chapter 13 discusses gases in sea water, while Chapter 14 covers aerosol propellants and Chapter 15 tackles the solubility of nitric oxide. Chapter 16 discusses the biotechnological aspects, and Chapter 17 talks about more on making holes. Chapter 18 covers the evaluation of data on phosphine. The book would be of great interest to researchers and professionals concerned with applications of the soluble nature of gases.

High Temperature Corrosion of Advanced Materials and Protective Coatings Yahachi Saito 2012-12-02 This book brings together the experience of specialists on High Temperature Corrosion. The 43 papers discuss topics related to the high temperature corrosion of engineering alloys, ceramics and protective coatings. The papers will be a useful and dynamic tool for those wishing to increase their knowledge of High Temperature Corrosion, as well as providing a guide to recent literature in this field.

Alkali Metal and Ammonium Chlorides in Water and Heavy Water (Binary Systems) R. Cohen-Adad 2013-10-22 This volume surveys the data available in the literature for solid-fluid solubility equilibria plus selected solid-liquid-vapour equilibria, for binary systems containing alkali and ammonium chlorides in water or heavy water. Solubilities covered are lithium chloride, sodium chloride, potassium chloride, rubidium chloride, caesium chloride and ammonium chloride in water and heavy water.

Methods for Phase Diagram Determination Ji-Cheng Zhao 2011-05-05 Phase diagrams are "maps" materials scientists often use to design new materials. They define what compounds and solutions are formed and their respective compositions and amounts when several elements are mixed together under a certain temperature and pressure. This monograph is the most comprehensive reference book on experimental methods for phase diagram determination. It covers a wide range of methods that have been used to determine phase diagrams of metals, ceramics, slags, and hydrides. * Extensive discussion on methodologies of experimental measurements and data assessments * Written by experts around the world, covering both traditional and combinatorial methodologies * A must-read for experimental measurements of phase diagrams

Laboratory Techniques in Electroanalytical Chemistry, Second Edition, Revised and Expanded Peter Kissinger 1996-01-23 This volume provides a practical, intuitive approach to electroanalytical chemistry, presenting fundamental concepts and experimental techniques without the use of technical jargon or unnecessarily extensive mathematics. This edition offers new material on ways of preparing and using microelectrodes, the processes that govern the voltammetric behavior of microelectrodes, methods for characterizing chemically modified electrodes, electrochemical studies at reduced temperatures, and more. The authors cover such topics as analog instrumentation, overcoming solution resistance with stability and grace in potentiostatic circuits, conductivity and conductometry, electrochemical cells, carbon electrodes, film electrodes, microelectrodes, chemically modified electrodes, mercury electrodes, and solvents and supporting electrolytes.

Sulfites, Selenites & Tellurites M.R. Masson 2013-10-22 This volume presents compilations and critical evaluations of reported solubility data for a wide range of compounds, including binary, ternary and more complex systems. The entire literature up to 1984 has been covered. Rigorous statistical procedures have been applied in the evaluations. For many of the ternary systems and some quaternary ones, computer-drawn phase diagrams are included (prepared to the same scale where possible to allow easy comparison).

Esters with Water 1992

Materials Handbook François Cardarelli 2018-07-09 The unique and practical Materials Handbook (third edition) provides quick and easy access to the physical and chemical properties of very many classes of materials. Its coverage has been expanded to include whole new families of materials such as minor metals, ferroalloys, nuclear materials, food, natural oils, fats, resins, and waxes. Many of the existing families—notably the metals, gases, liquids, minerals, rocks, soils, polymers, and fuels—are broadened and refined with new material and up-to-date information. Several of the larger tables of data are expanded and new ones added. Particular emphasis is placed on the properties of common industrial materials in each class. After a chapter introducing some general properties of materials, each of twenty-four classes of materials receives attention in its own chapter. The health and safety issues connected with the use and handling of industrial materials are included. Detailed appendices provide additional information on subjects as diverse as crystallography, spectroscopy, thermochemical data, analytical chemistry, corrosion resistance, and economic data for industrial and hazardous materials. Specific further reading sections and a general bibliography round out this comprehensive guide. The index and tabular format of the book makes light work of extracting what the reader needs to know from the wealth of factual information within these covers. Dr. François Cardarelli has spent many years compiling and editing materials data. His professional expertise and experience combine to make this handbook an indispensable reference tool for scientists and engineers working in numerous fields ranging from chemical to nuclear engineering. Particular emphasis is placed on the properties of common industrial materials in each class. After a chapter introducing some general properties of materials, materials are classified as follows. ferrous metals and their alloys; ferroalloys; common nonferrous metals; less common metals; minor metals; semiconductors and superconductors; magnetic materials; insulators and dielectrics; miscellaneous electrical materials; ceramics, refractories and glasses; polymers and elastomers; minerals, ores and gemstones; rocks and meteorites; soils and fertilizers; construction materials; timbers and woods; fuels, propellants and explosives; composite materials; gases; liquids; food, oils, resin and waxes; nuclear materials. food materials

The Experimental Determination of Solubilities G. T. Hefter 2003-11-14 * Guidelines are provided on the reliability of various methods, as well as information for selecting the appropriate technique. * Unique coverage of the whole range of solubility measurements. * Very useful for investigators interested in embarking upon solubility measurements.

Descriptive Inorganic Chemistry Researches of Metal Compounds Takashiro Akitsu 2017-08-23 Metal ions play an important role in analytical chemistry, organometallic chemistry, bioinorganic chemistry, and materials chemistry. This book, Descriptive Inorganic Chemistry Researches of Metal Compounds, collects research articles, review articles, and tutorial description about metal compounds. To perspective contemporary researches of inorganic chemistry widely, the kinds of metal elements (typical and transition metals including rare earth; p, d, f-blocks) and compounds (molecular coordination compounds, ionic solid materials, or natural metalloenzyme) or simple substance (bulk, clusters, or alloys) to be focused are not limited. In this way, review chapters of current researches are collected in this book.

Mercury in Liquids, Compressed Gases, Molten Salts and Other Elements H. Lawrence Clever 2013-10-22 An element of obvious importance, mercury is also hazardous in the environment and corrosive to many materials. A knowledge of its solubility is inestimable in addressing problems concerning the element's concentration in our surroundings. This volume presents all relevant data published on the solubility of mercury up to June 1986. By combining these data with the mercury equilibrium vapour pressure, Henry's constant and Ostwald coefficients can be calculated.

Intermetallic Chemistry Riccardo Ferro 2010-03 Intermetallic science is closely related to physics, chemistry, metallurgy, materials science & technology, and engineering. This book emphasizes the chemical aspects of this science, and therefore the mutual reactivity of metals and the characteristics of intermetallic compounds. Topics included are: OCo Phase diagrams of alloy systems. Many intermetallic systems form several compounds, generally not obeying common simple stoichiometric rules, which are often homogeneous in a certain range of compositions. The stability and extension of these phases are conveniently presented through phase diagrams. OCo Selected aspects of intermetallics structural chemistry, with emphasis on the solid state. The general structural characteristics of intermetallic phases are considered, with attention to nomenclature and to alternative and complementary methods of presenting crystal-chemical data. A brief account is given of derivative and degenerate structures, modular aspects of crystal structures, and of a few special groups of alloys such as quasicrystals and amorphous alloys. A number of selected structural prototypes with typical features, their possible grouping in structural OC familieso and their distribution among different types of alloys are provided. OCo Intermetallic reactivity trends in the Periodic Table. Attention is given to a few selected elemental parameters such as electron configuration and valence electron number and to their changes along the Table, which act as reference factors of the intermetallic behaviour. As an example, the relationships are considered between crystal structure and the number of valence electrons per atom (or per formula) in various classes of compounds or solid solution phases. OCo Alloying behaviour systematics of intermetallic systems with a

description of the intermetallic reactivity of each element, or group of elements, in the order of their position in the Periodic Table. For each pair of metallic elements, their capability to form intermediate phases is summarised by maps and schemes. OCo A description of small scale preparation methods of intermetallics. A number of interesting and significant peculiarities are, e.g., those related to their high melting points, insolubility in common solvents, etc. A Systematic treatment of alloying behaviour A Wide overview of intermetallic chemistry A Illustrated, with many examples"

Methane H. Lawrence Clever 2013-10-22 This volume completes the compilation and critical evaluation of solubility data for the first five members of the alkane hydrocarbon series. Literature coverage is complete to mid-1985, and all relevant papers reporting the solubility of methane gas in liquids have been consulted. Where appropriate, the original data have been recalculated in different unit systems, to allow better comparison between data from different sources. This rigorous treatment results in 'recommended' solubility values which can be used with confidence.

Metals in Mercury C. Hirayama 2017-03-03 The volume covers binary amalgams of all the metals, together with those of carbon, silicon and boron, a total of 76 systems. Complete literature coverage extends through 1983. The emphasis is on accurate, evaluated solubility data, but phase diagrams have been included where they have been defined, and will aid the reader in assigning the solid-liquid equilibrium. Tha data have been critically evaluated, and are classified as 'recommended' when independent determinations agree within experimental error. The data may also be used to compute thermodynamic properties of the binary components.

Intermetallic Compounds in Mercury 1992

4-Aminobenzenesulfonamides A.N. Paruta 2013-10-22 One of three volumes which together cover all reported solubility data for an important pharmaceutical class: the sulfonamides. A knowledge of solubility data is invaluable in all pharmaceutical research. Published solubility data for the title compounds have been compiled and critically evaluated, resulting in recommended solubility values which practising scientists may use with confidence. Each volume includes structural formulae and molecular weight details for the compounds covered, conveniently grouped together.

Materials Science for Dentistry B W Darvell 2018-03-24 Materials Science for Dentistry, Tenth Edition, is a standard resource for undergraduate and postgraduate courses in dentistry. It provides fundamental coverage of the materials on which dentistry depends, covering the structure and chemistry that govern the behavior and performance of materials. Particular classes of materials include gypsum, polymers, acrylic, cements, waxes, ceramics and metals. Other chapters review surfaces, corrosion, mixing, casting, cutting and bonding, and mechanical testing. This updated edition, which includes substantial chapters on chemistry, has been extensively revised with new material on temporary restoration resins, hydraulic silicate cements and the practical aspects of wetting surfaces. Mindfully written to provide explanations for behavior, formulation, clinical and laboratory instructions and procedures, there is no comparable resource for researchers, students, teachers and practitioners in the field of dentistry. Presents the most comprehensive and detailed book on dental materials science Includes new material that covers wetting, mechanics, zirconia, and fibers Contains a new chapter on chemistry Developed by an experienced international expert with feedback and input from practicing scientists, clinicians, instructors and students

Solubility Data Series Anthony N. Paruta 1988

Chemistry International 1996

Copper and Silver Halates E.M. Woolley 2013-10-22 Copper and Silver Halates is the third in a series of four volumes on inorganic metal halates. This volume presents critical evaluations and compilations for halate solubilities of the Group II metals. The solubility data included in this volume are those for the five compounds, copper chlorate and iodate, and silver chlorate, bromate and iodate.

Intermetallic Compounds in Mercury J.G. Osteryoung 2013-10-22 Intermetallic Compounds in Mercury is Volume 51 of the Solubility Data Series. It follows Volume 25, Metals in Mercury, of the same series. Evaluations of more than fifty systems are presented together with all of the data and citations from the original literature. In addition, over 200 references are given to related literature that describes metal interactions in amalgams but from which quantitative information can only be inferred. For each compound reported, a critical evaluation presents recommended or tentative values of solubilities or solubility products based on statistical treatment of the data reported. Mercury provides a unique solvent for metal-metal reactions, and thus the data reported here are a valuable addition to the experimental basis for better fundamental understanding of interactions of metals in the elemental state. In addition, this material is important technologically in the areas of metal processing, materials, and electrochemistry.

Precious Metals 1982 M.I. El Guindy 2013-10-22 Precious Metals 1982 presents the variety of technical innovations in the application of precious metals. This book discusses the advances in recovery and refining and analysis of precious metals. Organized into 10 parts encompassing 47 chapters, this book begins with an overview of the fundamental experiments to elicit the mode of solidification for a small casting using the investment casting method. This text then describes the various medical uses of silver and its salts with the antibacterial properties of silver ions used in burn therapy, water purification, and to prevent infections. Other chapters consider the practical feasibility of a process involving the reaction of oxygen with gold particles in a potassium cyanide solution to produce potassium gold cyanide. This book discusses as well the major catalytic applications of the precious metals. The final chapter deals with fraud involving gold. This book is a valuable resource for engineers, metallurgists, geologists, jewelers, and goldsmiths.

Gases in Molten Salts R.P.T. Tomkins 2016-01-22 This volume contains tabulated collections and critical evaluations of original data for the solubility of gases in molten salts, gathered from chemical literature through to the end of 1989. Within the volume, material is arranged according to the individual gas. The gases include hydrogen halides, inert gases, oxygen, nitrogen, hydrogen, carbon dioxide, water vapor and halogens. The molten salts consist of single salts, binary mixtures and multicomponent systems. Included also, is a special section on the solubility of gases in molten silicate systems, focussing on slags and fluxes.

Esters with Water F.W. Getzen 2013-10-22 This volume is the first of two devoted to esters and water. It includes solubility data for binary systems containing an ester and water up to the end of 1988. The critical evaluations were all prepared by one author and an introductory section has been included to elaborate the philosophy and methodology followed in the evaluations.

Electrochemistry of Technetium Maciej Chotkowski 2021-01-17 This book provides detailed information on the electrochemistry of technetium compounds. After a brief physico-chemical characterization of this element, it presents the comparative chemistry of technetium, manganese and rhenium. Particular attention is paid to the stability, disproportionation, comproportionation, hydrolysis and polymerization reactions of technetium ions and their influence on the observed redox systems. The electrochemical properties of both inorganic as well as organic technetium species in aqueous and non-aqueous solutions are also discussed. The respective chapters cover the whole spectrum of topics related to the application of technetium in nuclear medicine, electrochemistry of technetium in spent nuclear fuel (including corrosion properties of technetium alloys), and detecting trace amounts of technetium with the aid of electrochemical methods. Providing readers with information not easily obtained in any other single source, the book will appeal to researchers working in nuclear chemistry, nuclear medicine or the nuclear industry.

Alkali Metal Halates, Ammonium Iodate and Iodic Acid H. Miyamoto 2013-10-22 This volume presents compilations and critical evaluations of reported solubility data for the title compounds published up to mid-1984. These compounds have an important place in the history of analytical chemistry; practical applications include their use in pyrotechnics and the paper pulp industry. Also included are two BASIC computer programs which allow the calculation of solubilities at any temperature.

Alkaline Earth Hydroxides in Water and Aqueous Solutions I. Lambert 2013-10-22 This volume contains evaluated data on the solubility of beryllium hydroxide, magnesium hydroxide, calcium hydroxide, strontium hydroxide and barium hydroxide in water and in a number of electrolyte and nonelectrolyte solutions in water. The alkaline earth hydroxides can be divided into two groups depending on the hydration of the solid. First, the sparingly soluble anhydrous beryllium, magnesium and calcium hydroxides, whose freshly precipitated solids are poorly crystalline and show decreasing solubility with aging, and whose solubility in water decreases with increasing temperature. Second, the soluble strontium and barium hydroxide octahydrates that form crystalline precipitates which do not show changes in solubility on aging, and whose solubility in water increases with increasing temperature.

Solubility Data Series R.W. Cargill 2013-10-22 This volume in the Solubility

Data Series contains tabulated collections and critical evaluations of original data for the solubility of carbon monoxide in a variety of liquid solvents. The solvents include water, aqueous and non-aqueous salt solutions, a variety of hydrocarbons, a variety of oxygen-containing, halogen-containing, sulfur-containing, and nitrogen-containing organic compounds, and also some biological fluids with which carbon monoxide has an important interaction. The data were gathered from a search of the world's chemical literature through to the end of 1988, and make up a unique and valuable historical survey of the solubility of carbon monoxide. Their publication is timely in view of current concern about carbon monoxide as an atmospheric pollutant, and in view of the role which carbon monoxide is likely to play in the future, as chemical feedstocks may have to change in response to supply and demand patterns, and as alternative energy sources are developed, especially coal gasification technology. For all of these applications, and for numerous others, this volume of well documented and critically evaluated gas solubility data will be of tremendous benefit.

Disposal Strategy of Proton Irradiated Mercury from High Power Spallation Sources Suresh Chiriki 2010