Determination Of The Ideal Gas Law Constant Lab

Four coreholes were drilled (two before and two after mining) at a longwall mine to obtain coal and rock samples from overlying strata to determine their gas content at various times in the mining cycle. Test results indicate that 91 pct of the gas removed from the overlying strata came from coalbeds.

Results of a study aimed at improving group-contribution methodology for estimating thermodynamic properties of organic substances are reported. Specific weaknesses where particular group-contribution terms were unknown, or estimated because of lack of experimental data, are addressed by experimental studies of enthalpies of combustion in condensed phase, vapor-pressure measurements, and differential scanning calorimetric (d.s.c.) heat-capacity measurements. Ideal-gas enthalpies of formation of cyclohexene, phthalan (2,5-dihydrobenzo-3,4-furan), isoxazole, n-octylamine, di-n-octylamine, tri-n-octylamine, phenyl isocyanate, and 1,4,5,6-tetrahydropyrimidine are reported. Two-phase (liquid + vapor) heat capacities were determined for phthalan, isoxazole, the three octylamines, and phenyl isocyanate. Liquid-phase densities along the saturation line were measured for phthalan and isoxazole at 298 to 425 K. The critical temperature and critical density of n-octylamine were determined from d.s.c. results and critical pressure derived from the fitting procedures. Fitting procedures were used to derive critical temperatures, pressures, and densities for cyclohexene (pressure and density only), phthalan, isoxazole, di-n-octylamine, and phenyl isocyanate. Group-additivity parameters or ring-correction terms are derived.

Must-have reference for processes involving liquids, gases, and mixtures Reap the time-saving, mistake-avoiding benefits enjoyed by thousands of chemical and process design engineers, research scientists, and educators. Properties of Gases and Liquids, Fifth Edition, is an all-inclusive, critical survey of the most reliable estimating methods in use today --now completely rewritten and reorganized by Bruce Poling, John Prausnitz, and John O'Connell to reflect every late-breaking development. You get on-the-spot information for estimating both physical and thermodynamic properties in the absence of experimental data with this property data bank of 600+ compound constants. Bridge the gap between theory and practice with this trusted, irreplaceable, and expert-authored expert guide -- the only book that includes a critical analysis of existing methods as well as hands-on practical recommendations. Areas covered include pure component constants; thermodynamic properties of ideal gases, pure components and mixtures; pressure-volume-temperature relationships; vapor pressures and enthalpies of vaporization of pure fluids; fluid phase equilibria in multicomponent systems; viscosity; thermal conductivity; diffusion coefficients; and surface tension.

The Determination of the Self Diffusion Coefficient of Methane

Determination of Ideal-gas Enthalpies of Formation for Key Compounds

Chemistry 2e

University Physics

An Analysis of Factors Affecting the Compression Work of Non-ideal Gas Mixtures

The estimation, classification and reporting of oil and gas reserves and related substances has always been a vital part of the oil and gas industry. In spite of a need for consistent methods of reserve determination and terminology, no standardized definitions have really existed.

Master the fundamentals of thermodynamics and learn how to apply these skills in engineering practice today with Reisel's PRINCIPLES OF ENGINEERING THERMODYNAMICS, SI, 2nd Edition. This edition's informal writing style helps make abstract concepts easier to understand. In addition to mastering fundamental principles and applications, you explore the impact of different system parameters on the performance of devices and processes. For example, you study how changing outlet pressure in a turbine changes the power produced or how the power requirement of a compressor varies with inlet temperature. This unique approach strengthens your understanding of how different components of thermodynamics interrelate, while demonstrating how you will use thermodynamics in your engineering career. You also learn to develop computer-based models of devices, processes and cycles as well as practice using internet-based programs and computer apps to find thermodynamic data, exactly like today's practicing engineers. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This textbook provides a unified approach to acoustics and vibration suitable for use in advanced undergraduate and first-year graduate courses on vibration and fluids. The book includes thorough treatment of vibration of harmonic oscillators, coupled oscillators, isotropic elasticity, and waves in solids including the use of resonance techniques for determination of elastic moduli. Drawing on 35 years of experience teaching introductory graduate acoustics at the Naval Postgraduate School and Penn State, the author presents a hydrodynamic approach to the acoustics of sound in fluids that provides a uniform methodology for analysis of lumped-element systems and wave propagation that can incorporate attenuation mechanisms and complex media. This view provides a consistent and reliable approach that can be extended with confidence to more complex fluids and future applications. Understanding Acoustics opens with a mathematical introduction that includes graphing and statistical uncertainty, followed by five chapters on vibration and elastic waves that provide important results and highlight modern applications while introducing analytical techniques that are revisited in the study of waves in fluids covered in Part II. A unified approach to waves in fluids (i.e., liquids and gases) is based on a mastery of the hydrodynamic equations. Part III demonstrates extensions of this view to nonlinear acoustics. Engaging and practical, this book is a must-read for graduate students in acoustics and vibration as well as active researchers interested in a novel approach to the material.

The Experimental Determination of Solubilities

Determining the Source of Longwall Gob Gas
Principles and Modern Applications
The Road
Errors in Gas Analysis Due to Assuming that the Molecular Volumes of All Gases are Alike

This book introduces the techniques of Instrumental Analysis with respect to fundamental basics, technical realization, key applications, major strengths and limitations. The approach used is to highlight differences and consolidate similarities of the techniques, focusing especially on the viewpoint of the laboratory rather than on the scientific ideal or the limits of what is possible.

Determination of Some Pure Compound Ideal Gas Enthalpies of FormationDetermination of Ideal-gas Enthalpies of Formation for Key CompoundsThe 1989 Project ResultsConcept Development Studies in ChemistryOrange Groove BooksDetermination of Sonic Velocity in a Non-ideal GasChemistry 2eDetermination of Some Pure Compound Ideal-gas Enthalpies of FormationAberrations from the Ideal Gas Laws and a Precision Method for the Determination of the Densities of GasesGeneral ChemistryPrinciples and Modern ApplicationsPrentice HallDetermination of Ideal-gas Enthalpies of Formation for Key Compounds

This textbook takes an interdisciplinary approach to the subject of thermodynamics and is therefore suitable for undergraduates in chemistry, physics and engineering courses. The book is an introduction to phenomenological thermodynamics and its applications to phase transitions and chemical reactions, with some references to statistical mechanics. It strikes the balance between the rigorousness of the Callen text and phenomenological approach of the Atkins text. The book is divided in three parts. The first introduces the postulates and laws of thermodynamics and complements these initial explanations with practical examples. The second part is devoted to applications of thermodynamics to phase transitions in pure substances and mixtures. The third part covers thermodynamic systems in which chemical reactions take place. There are some sections on more advanced topics such as thermodynamic potentials, natural variables, non-ideal mixtures and electrochemical reactions, which make this book of suitable also to post-graduate students.

Ideal Gas Thermodynamics in Brief
Determination of Organic Structures by Physical Methods
Thermodynamics for Chemists, Physicists and Engineers
An Experimentalist's View of Acoustics and Vibration
Understanding Acoustics

The most trusted general chemistry text in Canada is back in a thoroughly revised 11th edition. General Chemistry: Principles and Modern Applications, is the most trusted book on the market recognized for its superior problems, lucid writing, and precision of argument and precise and detailed and treatment of the subject. The 11th edition offers enhanced hallmark features, new innovations and revised discussions that that respond to key market needs for detailed and modern treatment of organic chemistry, embracing the power of visual learning and conquering the challenges of effective problem solving and assessment. Note: You are purchasing a standalone product; MasteringChemistry does not come packaged with this content. Students, if interested in purchasing this title with MasteringChemistry, ask your instructor for the correct package ISBN and Course ID. Instructors, contact your Pearson representative for more information. If you would like to purchase both the physical text and MasteringChemistry, search for: 0134097327 / 9780134097329 General Chemistry: Principles and Modern Applications Plus MasteringChemistry with Pearson eText -- Access Card Package, 11/e Package consists of: 0132931281 / 9780132931281 General Chemistry: Principles and Modern Applications 0133387917 / 9780133387919 Study Card for General Chemistry: Principles and Modern Applications 0133387801 / 9780133387803 MasteringChemistry with Pearson eText -- Valuepack Access Card -- for General Chemistry: Principles and Modern Applications

'Microphysicalism', the view that whole objects behave the way they do in virtue of the behaviour of their constituent parts, is an influential contemporary view with a long philosophical and scientific heritage. In What's Wrong With Microphysicalism? Andreas Hüttemann offers a fresh challenge to this view. Hüttemann agrees with the microphysicalists that we can explain compound systems by explaining their parts, but claims that this does not entail a fundamentalism that gives hegemony to the micro-level. At most, it shows that there is a relationship of determination between parts and wholes, but there is no justification for taking this relationship to be asymmetrical rather than one of mutual dependence. Hüttemann argues that if this is the case, then microphysicalists have no right to claim that the micro-level is the ultimate agent: neither the parts nor the whole have 'ontological priority'. Hüttemann advocates a pragmatic pluralism, allowing for different ways to describe nature. What's Wrong With Microphysicalism? is a convincing and original contribution to central issues in contemporary philosophy of mind, philosophy of science and metaphysics.

NATIONAL BESTSELLER • WINNER OF THE PULITZER PRIZE • A searing, post-apocalyptic novel about a father and son's fight to survive, this "tale of survival and the miracle of goodness only adds to McCarthy's stature as a living master. It's gripping, frightening and, ultimately, beautiful" (San Francisco Chronicle). A father and his son walk alone through burned America. Nothing moves in the ravaged landscape save the ash on the wind. It is cold enough to crack stones, and when the snow falls it is gray. The sky is dark. Their destination is the coast, although they don't know what, if anything, awaits them there. They have nothing; just a pistol to defend themselves against the lawless bands that stalk the road, the clothes they are wearing, a cart of scavenged food—and each other. The Road is the profoundly moving story of a journey. It boldly imagines a future in which no hope remains, but in which the father and his son, "each the other's world entire," are sustained by love. Awesome in the totality of its vision, it is an unflinching meditation on the worst and the best that we are capable of: ultimate destructiveness, desperate tenacity, and the tenderness that keeps two people alive in the face of total devastation.

A Low-cost FSK Modem Network for Polled Communication Systems
Determination of Some Pure Compound Ideal-gas Enthalpies of Formation
Enthalpy and Internal Energy
Chemical IT
DIPPER Project 871 Determination of Ideal-gas Enthalpies of Formation for Key Compounds, The 1991 Project Results

This introduction to dimensional analysis covers the methods, history and formalisation of the field. Utilising topics including mechanics,

hydro- and electrodynamics, and thermal and quantum physics, it illustrates the possibilities and limitations of dimensional analysis, making it perfect for students on introductory courses in physics, engineering and mathematics.

The results of a study aimed at improvement of group-contribution methodology for estimation of thermodynamic properties of organic and organosilicon substances are reported. Specific weaknesses where particular group-contribution terms were unknown, or estimated because of lack of experimental data, are addressed by experimental studies of enthalpies of combustion in the condensed phase, vapor-pressure measurements, and differential scanning calorimetric (d.s.c.) heat-capacity measurements. Ideal-gas enthalpies of formation of ({plus minus})-butan-2-ol, tetradecan-1-ol, hexan-1,6-diol, methacrylamide, benzoyl formic acid, naphthalene-2,6-dicarboxylic acid dimethyl ester, and tetraethylsilane are reported. A crystalline-phase enthalpy of formation at 298.15 K was determined for naphthalene-2,6-dicarboxylic acid, which decomposed at 695 K before melting. The combustion calorimetry of tetraethylsilane used the proven fluorine-additivity methodology. Critical temperature and critical density were determined for tetraethylsilane with differential scanning calorimeter and the critical pressure was derived. Group-additivity parameters useful in the application of group- contribution correlations are derived. 112 refs., 13 figs., 19 tabs.

In this book, an almost new approach to modern thermodynamics has been applied. One or more useful qualitative discussion statements have been extracted from each equation. These and other important statements were numbered and their titles were situated in an index titled “Hilal and Others’ statements, definitions and rules.” This ensures very quick obtaining of the required statements, rules, definitions, equations, and their theoretical base that will ease readers qualitative discussions and calculations.

What's Wrong With Microphysicalism?

Aberrations from the Ideal Gas Laws and a Precision Method for the Determination of the Densities of Gases

Lower Kittanning Coalbed, Cambria County, PA

Instrumental Analysis

Containing the very latest information on all aspects of enthalpy and internal energy as related to fluids, this book brings all the information into one authoritative survey in this well-defined field of chemical thermodynamics. Written by acknowledged experts in their respective fields, each of the 26 chapters covers theory, experimental methods and techniques and results for all types of liquids and vapours. These properties are important in all branches of pure and applied thermodynamics and this vital source is an important contribution to the subject hopefully also providing key pointers for cross-fertilization between sub-areas.

This text presents statistical mechanics and thermodynamics as a theoretically integrated field of study. It stresses deep coverage of fundamentals, providing a natural foundation for advanced topics. The large problem sets (with solutions for teachers) include many computational problems to advance student understanding.

"University Physics is a three-volume collection that meets the scope and sequence requirements for two- and three-semester calculus-based physics courses. Volume 1 covers mechanics, sound, oscillations, and waves. This textbook emphasizes connections between theory and application, making physics concepts interesting and accessible to students while maintaining the mathematical rigor inherent in the subject. Frequent, strong examples focus on how to approach a problem, how to work with the equations, and how to check and generalize the result."--Open Textbook Library.

Determination of Sonic Velocity in a Non-ideal Gas

Chemistry

Precision Measurement and Calibration

A Student's Guide to Dimensional Analysis

Determination of Some Pure Compound Ideal Gas Enthalpies of Formation

A text that truly embodies its name, CHEMISTRY: PRINCIPLES AND PRACTICE connects the chemistry students learn in the classroom (principles) with real-world uses of chemistry (practice). The authors accomplish this by starting each chapter with an application drawn from a chemical field of interest and revisiting that application throughout the chapter. The Case Studies, Practice of Chemistry essays, and Ethics in Chemistry questions reinforce the connection of chemistry topics to areas such as forensics, organic chemistry, biochemistry, and industry. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Determination of Organic Structures by Physical Methods, Volume 1 focuses on the processes, methodologies, principles, and approaches involved in the determination of organic structures by physical methods, including infrared light absorption, thermodynamic properties, Raman spectra, and kinetics. The selection first elaborates on the phase properties of small molecules, equilibrium and dynamic properties of large molecules, and optical rotation. Discussions focus on simple acyclic compounds, carbohydrates, steroids, diffusion, viscosity, osmotic pressure, sedimentation velocity, melting and boiling points, and molar volume. The book then examines ultraviolet and visible light absorption, infrared light absorption, Raman spectra, and the theory of

magnetic susceptibility. Concerns cover applications to the study of organic compounds, applications to the determination of structure, determination of thermodynamic properties, and experimental methods and evaluation of data. The text ponders on wave-mechanical theory, reaction kinetics, and dissociation constants, including dissociation of molecular addition compounds, principles of reaction kinetics, and valence-bond treatment of aromatic systems. The selection is a valuable source of data for researchers interested in the determination of organic structures by physical methods.

** 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.*

An Introduction to Statistical Mechanics and Thermodynamics

Liquids, Solutions and Vapours

Information Circular

A Determination of the Ratio of the Specific Heats of Hydrogen at 180 and -1900 ...

Determination of Oil and Gas Reserves

Olmsted/Burk is an introductory general chemistry text designed specifically with Canadian professors and students in mind. A reorganized Table of Contents and inclusion of SI units, IU standards, and Canadian content designed to engage and motivate readers distinguish this text from many of the current text offerings. It more accurately reflects the curriculum of most institutions. Instructors will find the text sufficiently rigorous while it engages and retains student interest through its accessible language and clear problem solving program without an ex material that makes most text appear daunting and redundant.

Chemistry: Principles and Practice

NBS Special Publication

Concept Development Studies in Chemistry

Selected NBS Papers on Temperature

A Set of FORTRAN 4 Routines Used to Calculate the Mass Flow Rate of Natural Gas Through Nozzles