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Complete Guide to Laboratory Safety

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Principles of Smoke Management

2012 ASHRAE Handbook

Understanding Psychrometrics

Low GWP (A2L) Refrigerant Safety

The Sustainable Laboratory Handbook

HVAC Equations, Data, and Rules of Thumb, 2nd Ed.

Ventilation Systems

Fundamentals of Air System Design I-P, 2nd Edition

Exposure to Hazardous Chemicals in Laboratories

ASHRAE Laboratory Design Guide

Guide for the Care and Use of Laboratory Animals
Handbook of Smoke Control Engineering
Prudent Practices in the Laboratory
Prudent Practices in the Laboratory
Advanced Energy Design Guide for Small Warehouses and Self-storage Buildings
Natural Ventilation for Infection Control in Health-care Settings
Fundamentals of Air System Design (I-P Edition),
Bird-Friendly Building Design
A Practical Guide to Noise and Vibration Control for HVAC Systems
Combined Heat and Power Design Guide
Advanced Energy Design Guide for Small to Medium Office Buildings
HVAC Design Manual for Hospitals and Clinics
American National Standard for Laboratory Ventilation
Gravimetric and Dust-spot Procedures for Testing Air-cleaning Devices Used in General Ventilation for Removing Particulate Matter

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GEORGE JONAH

Guidelines for Design and Construction of Hospital and Health Care Facilities National Academies Press

As the HVACR industry continues to move forward and innovate, the refrigerants that were once so commonplace are now being phased out. Replacing them are more energy efficient, environmentally friendlier refrigerants, known as Low GWP refrigerants. Many of these new refrigerants are classified by ASHRAE as A2L, or slightly flammable. The industry is also seeing expanded use of some hydrocarbon (A3) refrigerants, such as propane and isobutane. Students and technicians will require

additional training for the safe handling and transportation of these refrigerants. The Low GWP refrigerant program manual covers: Refrigerant safety Introduction to Low GWP refrigerants Refrigerant properties and characteristics The refrigeration cycle Working with refrigerant blends Proper installation and service guidelines Flammable refrigerant considerations Explanation of the associated codes and standards for A2L refrigerants **ASHRAE Laboratory Design Guide** National Academies Press The 2014 ASHRAE Handbook--Refrigeration covers the refrigeration equipment and systems for applications other than human comfort. This volume includes data and guidance on cooling, freezing, and storing food; industrial and medical applications of refrigeration; and low-temperature refrigeration. The 2014 ASHRAE Handbook--Refrigeration CD, in

both I-P and SI editions, contains PDFs of chapters easily viewable using Adobe Reader. This product must be installed on user's computer. Product cannot be read directly from CD and is not compatible with mobile devices. Opened software cannot be returned for refund or credit.

International Codes National Academies Press

Advanced Energy Design Guide for Small to Medium Office Buildings is the first in a series designed to provide recommendations for achieving 50% energy savings over the minimum code requirements of ANSI/ASHRAE/IESNA Standard 90.1-2004. The energy savings target of 50% is the next step toward achieving a net zero energy building, which is defined as a building that, on an annual basis, draws from outside resources equal or less energy than it provides using on-site renewable energy sources. ANSI/ASHRAE/IESNA Standard 90.1-2004 provides the fixed reference point and serves as a consistent baseline and scale for all of the 50% Advanced Energy Design Guides. This Guide focuses on small to medium office buildings up to 100,000 ft². Office buildings include a wide range of office types and related activities such as administrative, professional, government, bank or other financial services, and medical offices without medical diagnostic equipment. These facilities typically include all or some of the following space types: open plan and private offices, conference and meeting spaces, corridors and transition areas, lounge and recreation areas, lobbies, active storage areas, restrooms, mechanical and electrical rooms, stairways, and other spaces. This Guide does not cover specialty spaces such as data centers, which are more typical in large office buildings. The specific energy-saving recommendations in

this Guide are summarized in a single table for each climate zone and will allow contractors, consulting engineers, architects, and designers to easily achieve advanced levels of energy savings without detailed energy modeling or analyses. In addition, this Guide provides a greater emphasis on integrated design as a necessary component in achieving 50% energy savings and devotes an entire chapter to integrated design strategies that can be used by teams who do not wish to follow the specific energy saving recommendations.

Environmental Design American Society of Heating Refrigerating and Air-Conditioning Engineers

"Provides comprehensive guidance for sizing, scheduling, specifying, controlling, and commissioning air terminal units (ATUs); aids design engineers in maximizing occupant comfort, HVAC acoustics, and energy efficiency of ATUs; can be an in-house training program for new designers or a reference for experienced engineers; new design paradigms are introduced throughout"--

HVAC Amer Society of Heating

Prudent Practices in the Laboratory-the book that has served for decades as the standard for chemical laboratory safety practice-now features updates and new topics. This revised edition has an expanded chapter on chemical management and delves into new areas, such as nanotechnology, laboratory security, and emergency planning. Developed by experts from academia and industry, with specialties in such areas as chemical sciences, pollution prevention, and laboratory safety, Prudent Practices in the Laboratory provides guidance on planning procedures for the handling, storage, and disposal of chemicals. The book offers

prudent practices designed to promote safety and includes practical information on assessing hazards, managing chemicals, disposing of wastes, and more. Prudent Practices in the Laboratory will continue to serve as the leading source of chemical safety guidelines for people working with laboratory chemicals: research chemists, technicians, safety officers, educators, and students.

Damp Buildings, Human Health, and HVAC Design World Health Organization

A respected resource for decades, the Guide for the Care and Use of Laboratory Animals has been updated by a committee of experts, taking into consideration input from the scientific and laboratory animal communities and the public at large. The Guide incorporates new scientific information on common laboratory animals, including aquatic species, and includes extensive references. It is organized around major components of animal use: Key concepts of animal care and use. The Guide sets the framework for the humane care and use of laboratory animals. Animal care and use program. The Guide discusses the concept of a broad Program of Animal Care and Use, including roles and responsibilities of the Institutional Official, Attending Veterinarian and the Institutional Animal Care and Use Committee. Animal environment, husbandry, and management. A chapter on this topic is now divided into sections on terrestrial and aquatic animals and provides recommendations for housing and environment, husbandry, behavioral and population management, and more. Veterinary care. The Guide discusses veterinary care and the responsibilities of the Attending Veterinarian. It includes recommendations on animal

procurement and transportation, preventive medicine (including animal biosecurity), and clinical care and management. The Guide addresses distress and pain recognition and relief, and issues surrounding euthanasia. Physical plant. The Guide identifies design issues, providing construction guidelines for functional areas; considerations such as drainage, vibration and noise control, and environmental monitoring; and specialized facilities for animal housing and research needs. The Guide for the Care and Use of Laboratory Animals provides a framework for the judgments required in the management of animal facilities. This updated and expanded resource of proven value will be important to scientists and researchers, veterinarians, animal care personnel, facilities managers, institutional administrators, policy makers involved in research issues, and animal welfare advocates.

Laboratory Design National Academies Press

This course covers the basics of air movement; components of air distribution systems; consideration of human comfort; load and occupancy demands; duct system design; sound and vibration; codes and standards; and air system start-up and diagnosis. What You Will Learn You will develop an understanding of the basics of air movement; the components of air distribution systems; considerations of human comfort; load and occupancy demand; duct system design; sound and vibration; and how codes and standards affect the design of air systems. After completing the course, you should know: The functions of the components of an air distribution system, including major equipment types and auxiliary components. The principles of air distribution as they relate to human comfort. The principal codes and standards

affecting air system design. How to layout and size a simple duct system and calculate pressure losses in the system. Common methods for reducing airborne sounds in systems and How to start an air system and diagnose common problems associated with air system start-up.

ASHRAE Design Guide for Air Terminal Units Ashrae

The Indoor Air Quality Guide: Best Practices for Design, Construction and Commissioning is designed for architects, design engineers, contractors, commissioning agents, and all other professionals concerned with IAQ. This comprehensive publication provides both summary and detailed guidance. The detailed guidance provides: Hundreds of internal and external links to invaluable IAQ resources Access to an incredible variety of in-depth information by topic to help you design construct and operate acceptable IAQ The CD that comes with the book contains the detailed guidance for implementing these strategies. Embedded in a digital version of the summary guidance information are hundreds of internal and external links to resources for the design, construction and commissioning of buildings with excellent indoor air quality.

Complete Guide to Laboratory Safety Ashrae

"Provides a summary of what is understood within ASHRAE about dampness-related health risks in buildings along with suggestions for HVAC system designers that can help avoid such risks as well as a simple and easily recognizable description of dampness that is sufficient to increase the probability of negative health effects and practical quantitative tools and techniques that can alert managers to the risk of a building or an indoor space becoming damp to an extent that affects health in the future"--

ASHRAE Handbook Refrigeration 2014 Amer Society of Heating "Current, authoritative guide on implementing combined heat and power (CHP) systems that provide electricity and useful thermal energy in a single, integrated system. Covers available technologies, site assessment, system design, installation, operation, and maintenance, with detailed case studies and a glossary. In dual units, Inch-Pound (I-P) and International System (SI)"--

ASHRAE Design Guide for Dedicated Outdoor Air Systems

John Wiley & Sons

The ASHRAE Laboratory Design Guide has been organized and developed to provide owners, designers, contractors, and operators with key information on the essential requirements for achieving high quality laboratory facilities. This design guide can be used for the design, troubleshooting, and operation of laboratory facilities or can be used as a comprehensive reference.

Underfloor Air Distribution (UFAD) Design Guide Industrial Press Inc.

This volume updates and combines two National Academy Press bestsellers--Prudent Practices for Handling Hazardous Chemicals in Laboratories and Prudent Practices for Disposal of Chemicals from Laboratories--which have served for more than a decade as leading sources of chemical safety guidelines for the laboratory. Developed by experts from academia and industry, with specialties in such areas as chemical sciences, pollution prevention, and laboratory safety, Prudent Practices for Safety in Laboratories provides step-by-step planning procedures for handling, storage, and disposal of chemicals. The volume

explores the current culture of laboratory safety and provides an updated guide to federal regulations. Organized around a recommended workflow protocol for experiments, the book offers prudent practices designed to promote safety and it includes practical information on assessing hazards, managing chemicals, disposing of wastes, and more. *Prudent Practices for Safety in Laboratories* is essential reading for people working with laboratory chemicals: research chemists, technicians, safety officers, chemistry educators, and students.

Indoor Air Quality Guide Ashrae

Provides information for engineers, architects, contractors and other building industry professionals who have little or no experience with acoustical terms or concepts. Presents practical design guidelines to help minimize the possibility of excessive HVAC system noise and vibration in and around buildings, and by suggesting investigation methods to help solve existing noise and vibration problems. ASHRAE Research Project 526.

LEED Reference Guide for Building Design and Construction

Bibliotheca Press

"Fourth in series that provides recommendations for achieving 30% energy savings over minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1-1999 for warehouses up to 50,000 ft² and self-storage buildings using heating and AC equipment. Helps achieve advanced energy savings without detailed calculations or analyses. Includes recommendations for all 8 US climate zones"--Provided by publisher.

ASHRAE Laboratory Design Guide Amer Society of Heating

This guide is ideal for HVAC design engineers, architects, building owners, facility managers, equipment manufacturers and

installers, utility engineers, researchers, and other users of underfloor air distribution (UFAD) technology. UFAD systems are innovative methods for delivering space conditioning in offices and other commercial buildings. Improved Thermal Comfort, Improved Ventilation Efficiency and Indoor Air Quality, Reduced Energy Use and Reduced Life-Cycle Building Costs -- The guide explains these as some of the advantages that UFAD systems have over traditional overhead air distribution systems. This guide provides assistance in the design of UFAD systems that are energy efficient, intelligently operated, and effective in their performance. It also describes important research results that support current thinking on UFAD design and includes an extensive annotated bibliography for those seeking additional detailed information.

Laboratory Design, Construction, and Renovation American

Society of Heating Refrigerating and Air-Conditioning Engineers

"Reference manual for planning, design, and operation of laboratory HVAC systems to reduce the laboratory's energy footprint while ensuring safety, providing good comfort and indoor air quality, and protecting the integrity of experiments; includes online access to electronic design tools that illustrate features of laboratories and provide practical design aids"--

Principles of Smoke Management Psychology Press

Laboratory facilities are complex, technically sophisticated, and mechanically intensive structures that are expensive to build and to maintain. Hundreds of decisions must be made before and during new construction or renovation that will determine how successfully the facility will function when completed and how successfully it can be maintained once put into service. This book

provides guidance on effective approaches for building laboratory facilities in the chemical and biochemical sciences. It contains both basic and laboratory-specific information addressed to the user community—the scientists and administrators who contract with design and construction experts. The book will also be important to the design and construction communities—the architects, laboratory designers, and engineers who will design the facility and the construction personnel who will build it—to help them communicate with the scientific community for whom they build laboratory facilities.

2012 ASHRAE Handbook ESCO Institute

The first comprehensive guide to modern laboratory planning in ten years to address both construction and operating aspects. Many of the 30 authors are affiliated with the European Association for Sustainable Laboratory Technologies (EGNATON), which has also endorsed this ready reference. This expert team covers the entire lifecycle of a laboratory facility, starting with the site layout and the planning of the building, followed by the planning of such areas as housing for laboratory animals, clean rooms and production facilities. The next section of the book deals with the installation of laboratory equipment, including storage and emergency facilities, while the final parts address safety and sustainability standards applicable to laboratories, as well as facility management and optimization during normal

laboratory operation. The relevant norms and standards are cited throughout, and examples from recent construction sites are also presented. Hundreds of photographs and drawings, many in full color, provide visual examples of the design and building concepts. As a result, readers will learn how to construct and maintain efficient and long-serving laboratory spaces with a minimum of maintenance costs and a maximum of safety. An invaluable, practical guide for planners, builders and managers of chemical, biological and medical research laboratories of any size.

Understanding Psychrometrics McGraw Hill Professional

Understanding Psychrometrics serves as a lifetime reference manual and basic refresher course for those who use psychrometrics on a recurring basis and provides a four- to six-hour psychrometrics learning module to students; air-conditioning designers; agricultural, food process, and industrial process engineers; meteorologists and others.

Low GWP (A2L) Refrigerant Safety

The 2012 ASHRAE Handbook--HVAC Systems and Equipment discusses various systems and the equipment (components or assemblies) they comprise, and describes features and differences. This information helps system designers and operators in selecting and using equipment. An accompanying CD-ROM contains all the volume's chapters in both I-P and SI units.