Safe Handling of Hazardous Materials and Chemicals Training Course

21 - 25 Dec 2026

Boston

7500 € (Per Person)

Ref: #ENV4950_101670

Course Introduction / Overview:

This course provides a comprehensive framework for managing hazardous materials and chemicals safely and effectively within any organizational setting. The curriculum is designed to move beyond basic compliance, instilling a deep understanding of the principles behind hazard identification, risk assessment, and control. Participants will explore the entire lifecycle of hazardous materials, from procurement and storage to handling, transportation, and disposal. Drawing on established principles from leading academic experts like Dr. D. A. Crowl, co-author of "Chemical Process Safety: Fundamentals with Applications," the program emphasizes proactive safety management systems. This approach, championed by BIG BEN Training Center, ensures that theoretical knowledge is directly translatable into practical workplace skills. We will delve into critical topics such as the Globally Harmonized System (GHS), interpreting Safety Data Sheets (SDS), selecting appropriate Personal Protective Equipment (PPE), and developing robust emergency response plans. The goal is to empower professionals to not only meet regulatory requirements but to foster a resilient safety culture that protects personnel, assets, and the environment from the risks associated with chemical hazards. This training is an essential investment in operational excellence and corporate responsibility.

Target Audience / This training course is suitable for:

- Environmental, Health, and Safety (EHS) Managers and Specialists.
- Warehouse and Logistics Supervisors.
- Chemical Plant Operators and Technicians.
- Laboratory Staff and Researchers.
- Emergency Response Team Members.
- Facilities and Maintenance Personnel.
- Supply Chain and Procurement Professionals.
- Operations Managers and Site Supervisors.
- Regulatory Compliance Officers.
- Anyone responsible for handling, storing, or transporting hazardous materials.

Target Sectors and Industries:

- Chemical Manufacturing and Processing.
- Oil and Gas Exploration and Refining.
- Pharmaceuticals and Biotechnology.
- Healthcare and Medical Facilities.
- Construction and Demolition.
- Transportation and Logistics.
- Waste Management and Environmental Services.
- Agriculture and Food Processing.
- Government agencies, including environmental protection and public safety departments.
- General Manufacturing and Industrial Operations.

Target Organizations Departments:

- Health, Safety, and Environment (HSE/EHS).
- Operations and Production.
- Logistics and Supply Chain Management.
- Warehouse and Inventory Control.
- Research and Development (R&D).
- Maintenance and Engineering.
- Emergency Management and Response.
- Quality Assurance and Control.
- Facilities Management.
- Compliance and Regulatory Affairs.

Course Offerings:

By the end of this course, the participants will have able to:

- Identify and classify hazardous materials according to the Globally Harmonized System (GHS).
- Interpret Safety Data Sheets (SDS) to understand chemical hazards and safety precautions.
- Conduct comprehensive risk assessments for activities involving hazardous substances.
- Select and properly use Personal Protective Equipment (PPE) for various chemical exposures.
- Implement safe storage practices, including segregation and chemical compatibility.
- Develop and execute effective emergency response and spill containment procedures.
- Understand key regulations governing the transportation of dangerous goods.
- Apply principles of safe hazardous waste management and disposal.
- Establish effective hazard communication programs within their teams.
- Contribute to building a proactive and sustainable chemical safety culture.

Course Methodology:

The training methodology at BIG BEN Training Center is centered on experiential and participatory learning to ensure maximum knowledge retention and practical application. This course moves beyond traditional lectures by integrating a dynamic blend of interactive workshops, group discussions, and detailed case study analyses of real-world chemical incidents. Participants will engage in hands-on exercises, such as deciphering complex Safety Data Sheets and conducting tabletop risk assessment simulations. We will utilize visual aids, practical demonstrations of spill control techniques, and scenario-based problem-solving to bridge the gap between theory and practice. Team-based activities will encourage collaborative learning and allow participants to share experiences and best practices from their respective industries. Our expert instructors facilitate a supportive learning environment, providing continuous feedback and guiding participants through complex regulatory landscapes. The focus is on empowering attendees with the confidence and competence to implement effective hazardous materials management systems immediately upon their return to the workplace, ensuring a lasting impact on organizational safety.

Course Agenda (Course Units):

Unit One: Foundations of Hazardous Materials Management

- Introduction to Hazardous Materials and Chemicals.
- The Globally Harmonized System (GHS) of Classification and Labelling.
- Understanding GHS Pictograms and Hazard Statements.
- Mastering the 16 Sections of a Safety Data Sheet (SDS).
- Key National and International Regulatory Frameworks.
- Roles and Responsibilities in Chemical Safety Management.
- The Importance of a Proactive Safety Culture.

Unit Two: Hazard Identification and Risk Assessment

- Physical Hazards of Chemicals (Flammable, Reactive, Explosive).
- Health Hazards (Toxic, Corrosive, Carcinogenic).
- Environmental Hazards and Ecotoxicity.
- Methods for Hazard Identification in the Workplace.
- Introduction to Qualitative and Quantitative Risk Assessment.
- Utilizing a Risk Matrix for Prioritizing Hazards.
- Understanding Exposure Limits (PEL, TLV, TWA).

Unit Three: Safe Handling, Storage, and Control Measures

- The Hierarchy of Controls (Elimination, Substitution, Engineering, Administrative, PPE).
- Principles of Engineering Controls (Ventilation, Containment).
- Selection, Use, and Maintenance of Personal Protective Equipment (PPE).
- Safe Chemical Handling and Transfer Techniques.
- Chemical Storage Requirements and Compatibility.
- Labeling of Primary and Secondary Containers.
- Managing Compressed Gas Cylinders Safely.

Unit Four: Transportation and Waste Management

- Introduction to Regulations for Transporting Dangerous Goods.
- Proper Shipping Names, Placarding, and Documentation.
- Packaging Requirements for Hazardous Materials.
- Defining and Categorizing Hazardous Waste.
- On-site Waste Accumulation and Segregation Procedures.
- Hazardous Waste Manifest System and Record Keeping.
- Best Practices for Minimizing Hazardous Waste Generation.

Unit Five: Emergency Preparedness and Spill Response

- Developing a Comprehensive Emergency Response Plan.
- Elements of an Effective Spill Prevention, Control, and Countermeasure (SPCC) Plan.
- Spill Assessment and Initial Response Actions.
- Spill Containment and Clean-up Procedures.
- Decontamination Procedures for Personnel and Equipment.
- Incident Investigation and Root Cause Analysis.
- Reporting Requirements and Communication Protocols.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

Beyond regulatory compliance, how can an organization cultivate a proactive safety culture where every employee instinctively prioritizes hazard recognition and control?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by focusing on the integration of risk management principles into the core of an organization's operational strategy, rather than simply presenting a checklist for regulatory compliance. While other programs may cover the "what" of hazardous materials regulations, we emphasize the "why" and "how" through a curriculum grounded in established process safety methodologies. We move beyond basic hazard identification to equip participants with the skills to conduct meaningful risk assessments, enabling them to prioritize resources and implement the most effective control measures. The curriculum is uniquely structured to build a holistic understanding, connecting the dots between chemical properties, handling procedures, waste management, and emergency preparedness. Instead of just learning to read a Safety Data Sheet, participants learn to use it as a dynamic risk management tool. Our emphasis on case studies and interactive, scenario-based learning ensures that participants develop the critical thinking skills necessary to manage unforeseen situations and champion a sustainable, world-class safety culture within their organizations.