



# HAZARDOUS MATERIAL Handling (HAZMAT)

## Course Introduction:

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This program is designed for engineers and technicians from a wide range of abilities and backgrounds and will provide an excellent introduction to mastering the management of hazardous waste materials as well as preventing contamination of the environment. This knowledge makes the participant aware of the legal and regulatory aspects of pollution and the handling of hazardous waste materials within their plants. It will also allow them to reduce the amount of hazardous waste produced and save money through preventing personal injury and preventing or limiting the effects of accidental pollution.

## Course Objectives:

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Be able to identify potential sources of pollution in and around your plant:

- Be acquainted with the latest technologies and techniques for preventing contamination/pollution
- Be acquainted with the latest technologies and techniques for handling hazardous waste materials
- Have an understanding of detection and measurement of contamination
- Have the skills for managing hazardous waste materials
- Know how to plan for and deal with emergencies

## Who Should Attend?

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Anyone involved in the handling of hazardous materials, this includes, but it is not limited to:

- Project Leaders
- Production Managers, Supervisors, Engineers and Technicians
- Maintenance Managers, Supervisors, Engineers and Technicians
- Consulting Engineers
- Operation, Inspection and Repair Managers, Supervisors, Engineers
- Transportation of hazardous substances
- Handling and assessment of risk prior to working with hazardous substances
- Procedures of dealing with spills and contamination of persons and property
- Appreciate the needs for emergency response plans
- The production of a hazardous substance Procedure Manual
- The safe disposal of hazardous waste and by products
- Personal Protective Equipment for working with hazardous substances
- Purchasing Controls for ordering hazardous materials
- Storage facilities and security considerations

# Course Outline:

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## DAY 1:

### PRE-TEST

#### MODULE ONE: INTRODUCTION

- Course objectives & Definitions
- BASIC CONCEPTS
- Identification of potential pollution sources
- Pollution monitoring technologies
- Environmental effects of pollution/hazardous waste
- Job Safety and Environment Analysis (JSEA)
- Material Safety Data Sheets (MSDSs)
- Toxicology
- Radioactivity

#### MODULE TWO: REGULATORY CONSTRAINTS

- Environmental laws
- Regulations governing storage and transportation of hazardous materials (national, provincial, regional, municipal)
- Brief comparison with regulatory requirements in other countries

#### WATER SUPPLIES

- Importance of protecting water supplies
- Water treatment process
- Ground water management
- Drinking water management

#### AIR

- Importance of protecting air quality
- Pollution prevention
- Pollution monitoring
- Air cleaning

## DAY 2:

#### MODULE THREE: PERSONAL SAFETY

- Personal Protection Equipment

- Handling flammable materials
- Handling corrosive materials
- Handling poisonous substances
- Handling radioactive materials

### **POLLUTION/CONTAMINATION PREVENTION PROCEDURES**

- Material balance systems including statistical inventory reconciliation analysis
- Building/plant design/layout
- Safety codes
- Management systems – induction, training, standard operating procedures

### **MODULE FOUR: CONTINGENCY PLANNING**

- Planning for emergencies
- Training of response teams
- Protective equipment and clothing & Dealing with spillage
- Dealing with release of hazardous substances into the atmosphere

### **MEASURING TECHNIQUES**

- Measurement techniques – sampling and testing
- Statistical sampling theory

### **DAY 3:**

### **MODULE FIVE: COSTS AND BENEFITS**

- Cost-benefit trade-offs
- Opportunity costs
- Costs of implementing (or not implementing safety measures)
- Ethical issues

### **MODULE SIX**

Introduction to course, its aims and objectives

- The role of the supervisor and manager in preventing chemical incidents
- Types of hazardous substances, understanding of key properties and principles of classification
- How international regulations identify hazardous substances

### **DAY 4:**

### **MODULE SEVEN**

- Hazardous data sheets, information required to complete or interpret hazard data sheets
- Packaging hazardous substances for carriage
- Transportation of hazardous substances, key international regulations
- The role of the purchasing department in ensuring safe handling

## **MODULE EIGHT**

- Transport of hazardous substances
- Documentation needs
- Safety equipment
- Operational controls/limits
- Storage of hazardous substances
- Bulk storage
- Packaged goods storage
- Chemical warehouses, design and operational features

## **DAY 5:**

### **MODULE NINE**

- PPE assessments selection and use
- Risk assessment as applied to transport and storage of hazardous substances
- Safe handling, control and measurement of exposure to hazardous substances
- Spillage containment, emergency response and decontamination/remediation

### **MODULE TEN**

- The problems associated with the disposal of chemical waste
- Special requirements relating to hazardous work
- Hazardous work documentation
- Key procedures, a suggested approved to the development of procedures
- Training needs assessment for the distribution and storage process

## **COURSE SUMMARY**

## **POST TEST**

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## Course Certificate:

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**International Center for Training & Development (ICTD)** will award an internationally recognized certificate(s) for each delegate on completion of training.

## Course Methodology:

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**A variety of methodologies will be used during the course that includes:**

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

## Course Fees:

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**To be advised as per the course location.** This rate includes participant's manual, Hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

## Course Timings:

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### Daily Course Timings:

08:00 - 08:20	Morning Coffee/Tea
08:20 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Coffee/Tea/Snacks)
13:30 - 15:00	Last Session

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