

TITLE: 40-Hour Technician

TARGET POPULATION: People who are or who anticipate responding to chemical emergencies.

OVERALL LEARNING OBJECTIVES:

- Evaluate spill potentials.
- Use references to determine hazards.
- Identify hazard control measures.
- Design standard operating procedures.
- Don and doff protective equipment.
- Use monitoring equipment
- Set up decontamination procedures.
- Recognize hazards at your facility
- Contain a release.
- Minimize exposure to hazardous materials.
- Prevent the spread of contaminants.
- Describe practices to reduce potential emergencies.
- Implement the emergency response plan (ERP).
- Play a role in the Incident Command System.

CHAPTER 1: LEGAL RIGHTS AND RESPONSIBILITIES – MAJOR CONTENTS

- What is a Hazardous Material?
- The Employer's Emergency Response Plan
- OSHA, SARA, HAZWOPER
- **Using HAZWOPER Exercise**
- HAZCOM – Hazard Communication Standard
- Other Agencies
- Other Legislation
- **BASF Accident Investigation Exercise**
- **Regulations and Agencies Exercise**

CHAPTER 2: HAZARD RECOGNITION – MAJOR CONTENTS

Section I – Chemistry:

- Principles of Basic Chemistry
- Chemical and Physical Properties
- Fire Triangle
- Explosive Limits
- Incompatible Chemicals
- NIOSH Pocket Guide Directions
- **NIOSH Pocket Guide Exercise #1 Worksheet**

Section II – Toxicology and Health Effects:

- Basic Principles of Toxicology
- Effects on Specific Body Systems
- Cancer Caused by Chemicals or Physical Agents
- Measurements of Concentration
- Exposure Limits
- **NIOSH Pocket Guide Exercise #2 Worksheet**

Section III – Physical and Safety Hazards:

- Types of Hazards
- **Hazard Recognition Exercise**

Section IV – Material Identification:

- Systems and Symbols
- **Placards and Labels Exercise**
- Documentation
- **MSDS Exercise**

CHAPTER 3: HAZARD CONTROL – MAJOR CONTENTS

- **Introduction to Hazard Control Exercise**
- Types of Hazard Control
- Emergencies
- Emergency Response Plans (ERP)
- Incident Command System
- Site Security and Control
- Standard Operating Procedures
- Medical Surveillance Program

e-tools: CA, DECON, TJ, CAM/AL, NPG, CRW, ICSC, TRI, MAR

CHAPTER 4: WORK PRACTICES – MAJOR CONTENTS

- Standard Operating Procedures (SOP)
- **Design and SOP Exercise**
- Confined-Space Entry Procedures
- Lock-Out Procedures
- Hot-Work Permit
- Material Handling and Transfer
- Bonding and Grounding
- Spill Control
- Booms and Dams
- Soil Moving Plan
- Equipment and Vehicle Operation
- Special Control Equipment
- Ladders and Scaffolding
- Termination
- **Work Practices Labs**

CHAPTER 5: PERSONAL PROTECTIVE EQUIPMENT – MAJOR CONTENTS

Section I – Respiratory Protection

- Respirator Selection
- Types of Respirators
- Air-purifying Respirators
- Supplied-Air Respirator (SAR)
- Self-Contained Breathing Apparatus (SCBA)
- Respirator Fit
- Respirator Protection Factors
- Respirator Protection Factor Exercise
- Medical Fitness to Wear a Respirator
- Facial Hair and Respiratory Protection
- Inspection, Maintenance, and Storage of Respirators
- Minimum Requirements for a Respirator Program
- Sample Respirator Program
- **Respiratory Protection Lab**
- Scenarios

Section II – Protective Clothing:

- Chemical-Protective Clothing (CPC)
- Levels of Personal Protective Equipment (PPE)
- Characteristics and Properties of CPC
- Precautions When Wearing CPC
- Inspection, Maintenance, and Storage of CPC
- Other Protective Clothing and Equipment
- **Levels of PPE Exercise**
- **PPE Lab**

CHAPTER 6: MONITORING – MAJOR CONTENTS

- The Importance of Monitoring
- What Can Be Monitored in the Air?
- Explosive Limits
- Types of Air Sampling
- Environmental Sampling
- Sampling Instruments
- Selecting Monitoring Equipment
- Sampling and Calibration Protocols
- Six Basic Rules of Operation
- **Sampling Equipment Lab**
- **Monitoring/SOP Exercise**

CHAPTER 7: DECONTAMINATION – MAJOR CONTENTS

- Pre-Planning for Decontamination
- Preventing Contamination
- Decontamination Procedures
- Decontamination Line
- **Lab: Suit-Up and Decontamination**
- **Decontamination Exercise**

CHAPTER 8: EMERGENCY RESPONSE EXERCISE – MAJOR CONTENTS

- **Mock Emergency Response Plan**
- **Rating Your Company Exercise**