

TABLE OF CONTENTS

Foreword..... iii

Introduction.....v

Unit 1: Health and Environmental Regulations

Hazardous Materials Legislation 1-1
 Responsibilities of Key Federal Agencies 1-5
 The Emergency Planning and Community Right-to-Know Act (Title III)..... 1-7
 Reducing Risks from Hazardous Materials Releases 1-11
 When the Laws are Not Obeyed 1-13
 Summary 1-14
 HazMat Teaser 1-15
 Check Your Memory 1-16

Unit 2: Hazardous Materials Identification Systems

Introduction..... 2-1
 The National Fire Protection Association’s 704 System 2-2
 The Department of Transportation’s Identification System 2-3
 DOT Placards and Labels 2-4
 DOT Hazard Classification System 2-4
 Shipping Documents (Papers)..... 2-8
 Example of Placard and Panel with ID Number 2-9
 ERG2004 User’s Guide 2-10
 Appropriately Labeled and Placarded..... 2-11
 Toxic Industrial Chemicals (TICs) 2-11
 Chemical Warfare Agents (CWA) and TIC..... 2-13
 Commodity Flow Survey (CFS) 2-14
 Summary 2-14
 HazMat Teaser 2-16
 Check Your Memory 2-18

Unit 3: Identifying Hazardous Materials

Detecting the Presence of a Hazard 3-1
 Hazardous Materials Production and Storage..... 3-2
 Reading and Interpreting a Material Safety Data Sheet (MSDS) 3-3
 Hazardous Waste Sites..... 3-7
 Hazardous Materials in Rural Areas 3-8
 Summary 3-9
 HazMat Teaser 3-10
 Sample Material Safety Data Sheet (MSDS)..... 3-12
 Check Your Memory 3-14

Unit 4: Hazardous Materials and Human Health

Hazardous Materials in the United States 4-1
 Definition of Hazardous Materials..... 4-3
 How Hazardous Materials Harm the Body 4-4
 Pathways of Exposure..... 4-6
 Assessing Risk 4-6
 Toxic Materials in the Body 4-7
 Studies of Toxic Effects..... 4-11
 Hazardous Materials in the Environment 4-12
 Summary 4-16
 HazMat Teaser 4-17
 Check Your Memory 4-18

Unit 5: Preparing for Hazardous Materials Incidents

Is Your Community Prepared for a Hazardous Materials Incident?..... 5-1
 Roles in Incident Response 5-5
 Protecting Yourself in a HazMat or Terrorist Incident..... 5-10
 What Citizens Can Do to Enhance Local Preparedness 5-15
 Summary 5-19
 Is Your Community Prepared for a Hazardous Materials Emergency? 5-21
 HazMat Teaser 5-23
 Check Your Memory 5-25

Glossary A-1

Resources

Member Agencies of the National Response Team.....B-1
 Pipeline and Hazardous Materials Safety AdministrationB-2
 Transportation Safety Institute.....B-3
 Environmental Protection AgencyB-4
 U.S Department of Labor Occupational Safety & Health AdministrationB-5
 Federal Emergency Management AgencyB-6
 National Response Center.....B-7
 Recommended ReadingB-8
 Other Courses.....B-9

Answer Key

HazMat TeasersC-1
 Check Your MemoryC-4

Final Examination..... D-1

Grateful acknowledgement is given to the Genium Publishing Corporation of Schenectady, New York, for providing the sample Material Safety Data Sheet (MSDS) that appears in Unit 3.

FOREWORD

COURSE SPONSORS

Three Federal agencies have contributed to the development of this home study course: the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), and the Department of Transportation (DOT). All three agencies have responsibilities related to the *protection of the public from hazards* posed by the manufacture, transportation, and disposal of hazardous materials.

The DOT is charged with the development and oversight of the Nation's transportation policy, including the regulation of interstate hazardous materials transportation. The EPA is the primary agency responsible for protecting our environment, including funding cleanup operations at thousands of abandoned hazardous waste disposal sites and oversight of programs to regulate disposal of hazardous wastes identified by certain legislation. The FEMA is the central point of contact within the Federal government for a wide range of emergency management activities in both peace and war. That responsibility includes the design, delivery, coordination, and monitoring of hazardous materials training in cooperation with the members of the National Response Team (NRT).

On March 1, 2003, the Federal Emergency Management Agency became part of the U.S. Department of Homeland Security (DHS). FEMA's continuing mission within the DHS is to lead the effort to prepare the Nation for all hazards and effectively manage Federal response and recovery efforts following any national incident. FEMA also initiates proactive mitigation activities, trains first responders, and manages the National Flood Insurance Program and the U.S. Fire Administration. FEMA has ten regional offices, and two area offices. Each region serves several States, and regional staff work directly with the States to help plan for disasters, develop mitigation programs, and meet needs when major disasters occur. They have Technical Hazard Specialists to deliver hazardous materials training. Regions also have State training partners to assist in the delivery of other emergency preparedness training courses throughout their regions. You should become familiar with these individuals and attend hazardous materials training programs when they are offered within your State. Such programs will increase your emergency preparedness and professional development in identifying and reporting hazardous materials incidents to appropriate authorities within your community.

Independent Study Courses

The independent study program is one of the delivery channels the Emergency Management Institute (EMI) uses to deploy emergency management training to the general public and to select emergency management audiences.

Go to <http://training.fema.gov/emiweb/is/> for information on these courses.

These independent study courses are geared toward both the general public and persons who have local government responsibilities for emergency management. All courses are suitable for either individual or group enrollment, and are available at no charge. Courses include a final examination, and persons who score 75% or better on the examination are issued a certificate of completion by EMI.

If you have questions about these courses, you may call (301) 447-1200; e-mail independent.study@dhs.gov; or write to:

FEMA Independent Study Program
Administration Office
Emergency Management Institute
16825 S. Seton Avenue
Emmitsburg, MD 21727

INTRODUCTION

As hazardous materials and hazardous wastes become more and more commonplace, accumulating in our earth, air, and water, it is vitally important that citizens are well informed about the challenges posed by these substances. American communities are facing policy decisions that can dramatically affect their population's well being: Should hazardous materials traffic be regulated? What is the community's role in preparing for the possibility of a serious hazardous materials accident? What should be done with household hazardous wastes? Concerned community members willing to take the time to learn more about such issues can help protect their own health and contribute to their community—for just as surely as there are thorny problems associated with hazardous materials, there are creative minds at work seeking and testing solutions.

This home study course is intended to provide interested members of the general public with a basic introduction to hazardous materials that can serve as a foundation for more specific research. No prior knowledge of the subject is assumed. At the end of the course, the reader should be able to:

- Recognize the dangers posed by hazardous materials;
- List places where hazardous materials are likely to be encountered;
- Identify when a hazard may exist;
- Contact the appropriate persons or agencies to give or receive specific hazardous materials information; and
- Identify procedures to minimize personal and community exposure to hazardous materials.

The course has five units:

Unit 1: Health and Environmental Regulations explains the roles of Federal, State, and local governments in reducing hazardous materials risks, and reviews the key provisions of critical Federal legislation.

Unit 2: Hazardous Materials Identification Systems discusses the two major hazardous materials identification systems currently being used in the United States. It also outlines how communities identify possible targets of opportunity in a terrorist's use of toxic industrial chemicals (TICs) as Weapons of Mass Destruction (WMD).

Unit 3: Identifying Hazardous Materials provides an overview of locations in which these materials are commonly found and discusses ways of determining what particular chemicals, with what health effects, exist in these locations.

Unit 4: Hazardous Materials and Human Health introduces many of the basic terms used to discuss hazardous materials problems, and explains how hazardous materials enter and move through the body and the environment.

Unit 5: Preparing for Hazardous Materials Incidents shows what local communities can do to increase their preparedness to respond to hazardous materials accidents of any size. It also identifies steps individuals can take to protect themselves in an incident.

How to Complete the Course

You will remember the material best if you do not rush through it. Often there is white space next to the text where you can make notes. (The more you interact with the material, the better you will remember it!) Take a break at the end of each unit and give yourself time to think about the material. Then, go back and take the quiz at the end of the unit, reviewing the relevant material if you missed any questions.

Besides the five units, there is a glossary, a resource section to help you continue learning, and a final examination. The components of each are listed below.

The ***glossary***, located after the final unit, contains definitions of terms related to hazardous materials. The glossary may be consulted while you are reading the units, or may be read separately.

A ***resource section*** is included to help you continue learning after you have completed the course. This section features listings of organizations that can supply additional information relevant to course objectives, recommended reading, computer networks accessible to the public, and telephone services that supply information on specific hazardous materials issues.

The ***final examination***, located at the end of the course, will test the knowledge you have gained from the course. An answer sheet is supplied with the course materials online. You may print out the answer sheet and complete the examination. Mail the completed answer sheet to the address above. Or you can **take the examination online**. Your test will be evaluated and results will be mailed to you within a few weeks. If your score is 75% or above, a certificate of completion will be mailed to you. Interested participants successfully completing the course may apply for 1 semester hour of college credit through the FEMA Independent Study Program Office.