PREPARING REGULATED MEDICAL WASTE FOR SHIPMENT

DOT HAZMAT EMPLOYEE TRAINING

Environmental Health and Safety

Hazardous Material Services

2007
1.0 INTRODUCTION (GENERAL AWARENESS/FAMILIARIZATION)

1.1 Training


Current DOT regulations require training (and retraining) of all employees who perform work functions covered by the HMR. Any employee who works in a shipping, receiving or material handling area may be involved in preparing or transporting hazardous materials, and if so would be considered a hazmat employee by the HMR. Common hazmat employee functions covered by this training requirement include, but are not limited to the following:

- Filling a hazardous materials packaging
- Closing a filled hazardous materials package or container
- Marking or labeling a package to indicate it contains a hazardous material
- Preparing a shipping paper
- Certifying on the shipping paper that a hazardous material is in proper condition for transportation
- Loading a hazardous material package onto a transport vehicle

The training must include information on general awareness and familiarization of the HMR, security awareness, safety, and information specific to the functions carried out by the hazmat employee. Certificates of training and testing, along with the training materials, must be kept on file by the hazmat employer.

There can be significant penalties imposed by the DOT for not complying with the HMR and these training requirements.

1.2 Hazardous Materials

A hazardous material is a substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated in the HMR.

The HMR divides hazardous materials into 9 hazard classes, numbered 1 though 9:

1 – Explosives
2 – Compressed gases
3 – Flammable liquids
4 – Flammable solids
5 – Oxidizers and organic peroxides
6 – Toxic and infectious substances
7 – Radioactive materials
8 – Corrosives
9 – Miscellaneous hazardous materials

Some of the 9 hazard classes are further divided into subclasses called Divisions. For example, Class 2 includes Division 2.1 (Flammable gases), Division 2.2 (Non-flammable gases), and Division 2.3 (Toxic gases).

The Hazardous Materials Table (49 CFR 172.101) is the backbone of the Hazardous Materials Regulations. Understanding and knowing how to use this table is the first step toward compliance. For each material listed, the Hazardous Materials Table identifies each hazard class or specifies that the material is forbidden in transportation. It provides the proper shipping name of the material or directs the user to the preferred proper shipping name. In addition, the table specifies or references requirements pertaining to labeling, packaging, quantity limits aboard aircraft, and stowage of hazardous materials aboard vessels.

2.0 SECURITY AWARENESS

As a result of the terrorist attacks of September 11, 2001, and subsequent threats related to biological and chemical materials, the DOT has issued security requirements for persons who ship hazardous materials. An integral part of the DOT security requirements are transportation security plans. While many hazardous material shipments are not normally subject to these requirements, the DOT has specified that all hazmat employees receive security awareness training. The following paragraphs are based on security awareness training materials developed by the DOT and address potential targets, potential threats, and prevention.

Hazardous materials are essential for the economy of the United States and the wellbeing of its citizens. Millions of tons of hazardous materials are transported every day. They are moved by plane, train, truck, and vessel. The quantities in these shipments range from a few ounces to many thousands of gallons. In the wrong hands hazardous materials can pose a significant threat. Some of them are easily transformed into terrorist weapons. Addressing this threat is vital to protecting our citizens and our economy.

What if a cargo of chlorine gas is hijacked and released at a large public event such as an MU football game? This unthinkable act is possible, thus the security of hazardous materials in transportation is of critical importance. While many of the materials classified by the DOT as hazardous materials are essential products for industry, they also represent potential deadly weapons in the hands of a terrorist. Some relatively simple chemical mixtures can cause a powerful explosion if detonated or ignited. The task of securing hazardous materials against unauthorized access is daunting. For example, the transportation of gasoline and propane requires a nation-wide fleet of 85,000 trucks. Law enforcement agencies alone cannot guarantee the safety of these trucks or the security of our transportation system. The help of everyone involved in the transportation of hazardous materials, including shippers both large and small, is needed to secure the transportation system.
A suicide bomber drives a truck loaded with ammonium nitrate, urea, and nitric acid into the garage of a high-rise office building. A terrorist cell ignites a stolen truck of gasoline in New York’s Hudson River Tunnel. An anti-government militia ignites 24 million gallons of liquid propane in a storage facility. All of these scenarios are credible because they either actually happened or were planned and successfully prevented. These are just three examples of acts of violence that illustrate the vulnerability of hazardous materials in our transportation system. A terrorist or saboteur may target railroad tracks, highways, bridges, tunnels, chemical plants, population centers, or historic monuments. The fraudulent shipment of a small quantity of material by a group or individual intent on destruction is all that may be required to implement a terrorist attack. We must be aware that, regardless of how unlikely we feel that these types of events might happen, the potential threat exists.

What type of people might pose the most significant threat to transportation security? While the most likely terrorist threats are external, the unsuspected attacker could be a disgruntled employee, angry with his or her supervisor, job, or the government. He or she may often feel persecuted and sometimes make overt threats of violence. Any threat should be taken seriously. While external threats are most significant, we have learned that terrorists can be patient and may infiltrate legitimate businesses. Often they have worked for months or years in a job in order to obtain a position of trust that they can use to their advantage. Part-time and temporary employees who have access to hazardous materials may use their position to carry out acts of sabotage or theft.

What can you do to prevent or deter unauthorized access to potentially lethal hazardous materials? Start with a serious evaluation of your specific operation to identify its vulnerabilities. In matters of personnel, MU Human Resource Services routinely screens finalists applying for positions at MU to confirm the data provided by the applicants. Concerning hazardous materials security, you should consider keeping storage areas locked, restricting access by non-employees, and keeping updated and accurate inventories. Also consider conducting regular inspections of storage areas and conducting spot checks of personnel and vehicles.

3.0 REGULATED MEDICAL WASTE (FUNCTION SPECIFIC)

3.1 Definition

Regulated medical waste, also known as infectious waste, biohazardous waste, or path waste, is defined in the HMR as:

- waste or reusable material derived from the medical treatment of an animal or human, which includes diagnosis and immunization, or from biomedical research, which includes the production and testing of biological products.

In Missouri, infectious waste is defined as:

- waste capable of producing an infectious disease because it contains pathogens of sufficient virulence and quantity so that exposure to the waste by a susceptible human host could result in an infectious disease.
These wastes include isolation wastes, cultures and stocks of etiologic agents, blood and blood products, pathological wastes, other contaminated wastes from surgery and autopsy, contaminated laboratory wastes, sharps, dialysis unit wastes, and discarded biological materials known or suspected to be infectious.

### 3.2 Packaging

Regulated medical waste has particular packaging requirements which must be followed in order to comply with DOT regulations. Laboratory workers are responsible for using the proper biohazard bags and boxes or plastic tubs, and closing them correctly. Laboratory workers should refer to the guidelines provided by the regulated medical waste disposal vendor for proper packaging instructions. These instructions are provided at all the path waste pickup locations on campus. Key points to remember are outlined below.

- Only use the boxes, tubs and bags provided by the medical waste disposal vendor
- The weight limit on boxes or tubs is 40 lbs (regardless of medical waste disposal vendor instructions)
- Sharp materials must be placed into puncture-resistant containers prior to placing in a box or tub
- Boxes and tubs must be lined with the provided plastic bag
- Bags must be sealed
- Boxes and tubs must be securely closed (box flaps inserted, tub lids locked)
- Boxes or tubs must not be leaking

All required markings, including the universal biohazard symbol, are present on the provided boxes and tubs.

### 3.3 Shipping papers (Documentation)

Regulated medical waste must be accompanied by a shipping paper when transported. The shipping paper is known as the Regulated Medical Waste Manifest, which is provided by the disposal vendor, and acts as a tracking document for the transporter and disposal facility. The manifest provides information to emergency responders, identifying the hazardous material from the Hazardous Materials Table, by proper shipping name, hazard class, ID number, and packing group as shown below:

**Regulated medical waste, 6.2, UN3291, PG II**

The quantity of waste must also appear on the manifest, and is documented by the transporter at the time of pickup.

The manifest should only be signed by a worker that has completed this training. By signing the manifest at the time of pickup, the laboratory worker is certifying that the regulated medical waste is packaged properly and is ready for transport. This is ensured when laboratory workers follow the packaging guidelines provided by the disposal vendor.
4.0 SAFETY

Emergency response information is required to be included with the shipping paper for a hazardous material. This information is provided on the Regulated Medical Waste Manifest, and includes contact numbers in case of an emergency involving the hazardous material. The regulated medical waste transporter will have additional emergency response information available at all times the material is in transport, and will also have the necessary spill and contamination control materials available.

MU has a complete Biological Safety Program in place to protect laboratory workers from biohazards. This is a complete program of recognition, evaluation, and control to minimize the health risk to students, faculty, staff, and the public from potential exposure to biohazardous materials that are used in the research and teaching activities at MU. To be effective, this program needs the active participation of faculty, staff and students.

The Biosafety Program is designed to:

- Enhance biosafety knowledge for MU Faculty, Staff, and Students.
- Assist researchers in protecting personnel, the environment and property from exposure.
- Provide the process and tools to assess safety needs and precautions for emergency response, planning, initiation, and termination of activity involving biohazardous materials.

The goals of the Biosafety Program are:

- Protect personnel from exposure to infectious agents.
- Prevent environmental contamination.
- Provide an environment for high quality research while maintaining a safe workplace.
- Comply with applicable federal, state, and local requirements.

When handling containers of potentially biohazardous material, the laboratory worker should always take the necessary measures to avoid exposure. Laboratory coats or aprons, eye protection, face shields, gloves, respiratory protection, or other personal protective equipment should be used when necessary. Laboratory workers should be aware of the potential for sharps injuries, as well as leaking containers. If a container is found to be leaking, use caution and the appropriate personal protective equipment to transfer the material to a non-leaking container.
DOT Training Test
Components: General Awareness/Familiarization; Safety; Security Awareness; Function Specific – Regulated Medical Waste

Name: ___________________________  MU Employee ID No: ___________________________
Instructor: Jon D. White
Date: ___________________________

Circle the letter next to the most appropriate answer.

1. The current DOT regulations require training for whom?
   a) All employees who work in labs
   b) All employees who perform work functions covered by the Hazardous Materials Regulations
   c) All employees who work at MU
   d) All EHS staff members

2. The Hazardous Materials Regulations divide hazardous materials into how many classes?
   a) 6
   b) 7
   c) 8
   d) 9

3. Which of the following would not be a hazmat employee function?
   a) Washing glassware in a lab
   b) Signing a shipping paper
   c) Filling a hazardous material package
   d) Closing a hazardous material package

4. The backbone of the Hazardous Materials Regulations is
   a) The Table of Contents
   b) The US Coast Guard
   c) The Hazardous Materials Table
   d) The US Postal Service

5. The Security Awareness training materials address which of the following?
   a) Potential Targets
   b) Potential Threats
   c) Prevention
   d) All of the above

6. True or False: Some relatively simple chemical mixtures can cause a powerful explosion if detonated or ignited.
   a) True
   b) False
7. Which of the following can you reasonably do to help deter unauthorized access to hazardous materials?
   a) Install a 20-foot high storm fence around your building
   b) Keep areas where hazardous materials are stored locked
   c) Never let anyone enter the hazardous materials area without a retinal scan
   d) None of the above

8. Path waste is identified in the Hazardous Materials Regulations as
   a) Regulated biowaste
   b) Pathological waste
   c) Regulated medical waste
   d) Regulated pathological material

9. True or False: Sharp materials must be placed into puncture-resistant containers prior to placing in the boxes or tubs provided by the regulated medical waste disposal vendor.
   a) True
   b) False

10. The MU weight limit on boxes or tubs of path waste is
    a) 60 lbs
    b) 50 lbs
    c) 40 lbs
    d) 30 lbs

11. Boxes or tubs used to package path waste for transport must be
    a) At least 3 feet tall
    b) Taped closed with duct tape
    c) Lined with the plastic bag provided by the regulated medical waste disposal vendor
    d) All of the above

12. The shipping paper for regulated medical waste is known as the
    a) Receipt
    b) Straight Bill of Lading
    c) Air Waybill
    d) Regulated Medical Waste Manifest

13. True or False: MU has a complete Biological Safety Program in place to protect laboratory workers from biohazards.
    a) True
    b) False

14. Emergency response information is required to be included with
    a) The shipping paper for a hazardous material
    b) All correspondence to the disposal vendor
    c) Containers of regulated medical waste
    d) All correspondence with EHS