

## HAZARDOUS MATERIALS SHIPPING & RECEIVING GUIDE

Version	Date	Comments
1	September, 2013	Initial <i>Hazardous Materials Shipping and Receiving Guide</i>

### A. INTRODUCTION

This *Hazardous Materials Shipping and Receiving Guide* outlines the requirements necessary for the proper acceptance procedures for receipt of all shipments of hazardous materials and for shipment of hazardous materials by university employees. Following this Guide will facilitate safe and secure receipt of packages as well as proper, safe, an expedient shipment of hazardous materials in accordance with US Department of Transportation (DOT) regulations outlined in 49CFR172.

### B. SCOPE

This Guide applies to all university employees who receive or sign for packages containing hazardous materials and any personnel who may be required to ship hazardous materials on an infrequent basis.

### C. HAZARDOUS MATERIALS

A hazardous material is defined as a substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term includes hazardous substances, hazardous wastes, marine pollutants, and elevated temperature materials. The Environmental Health and Safety Office (EHS) will assist in identifying what materials are and are not hazardous materials upon request. There are nine hazard classes:

Hazard class	Name of class or division	Examples of Materials
Class 1	Explosives	Picric acid, nitroglycerin, ammunition
Class 2.1	Flammable gas	Hydrogen, acetylene, butane
Class 2.2	Non-flammable gas	Nitrogen, helium, argon
Class 3	Flammable liquid	Alcohols, Ethers, acetone, acrylonitrile
Class 4.1	Flammable solid	Paraformaldehyde, aluminum powder
Class 4.2	Spontaneously combustible	Sodium hydrosulfite, potassium sulfide
Class 4.3	Dangerous when wet	Sodium borohydride, sodium metal
Class 5.1	Oxidizer	Potassium permanganate, sodium nitrate
Class 5.2	Organic peroxide	Benzoyl peroxide
Class 6.1	Toxic substance	Azides, cyanides, mercury compounds
Class 6.2	Infectious substance	HIV cultures, human materials
Class 7	Radioactive material	<sup>35</sup> S, <sup>14</sup> C, <sup>3</sup> H, <sup>32</sup> P
Class 8	Corrosive	Hydrochloric acid, sulfuric acid
Class 9	Miscellaneous dangerous goods	Dry ice, lithium batteries, PCB's

## **D. IDENTIFYING A HAZARDOUS MATERIALS PACKAGE**

DOT-approved packaging is the primary indication that a shipment contains hazardous materials (See *Attachment A: Indications of a Hazardous Materials Package* for examples):

- Packages marked or labeled with a “UN” or “NA” notation followed by a 4 digit number and the proper name and quantity of the hazardous material being shipped.
- The present of a square on point or diamond shaped label(s) or markings containing an associated hazard class number also indicate that the package contains hazardous materials.
- Packages of exempt or limited quantities may be marked “Limited Quantity”, or DOT-E followed by a four digit number.
- Or the package may have a square on point label or marking with the top and bottom portions in black with a white center or a suitable contrasting color to the background. A black letter “Y” may be present in the white center indicating a “limited quantity” shipped by air.

Hazardous material is commonly shipped with a hazardous material shipping paper, dangerous goods declaration, or bill of lading, which will directly identify the proper name, class, and amount of hazardous material being shipped. See Attachment A for example. Some hazardous materials are sent in exempt or limited quantities and will not be accompanied by, or identified on, a shipping paper.

## **E. RECEIVING HAZARDOUS MATERIALS**

When receiving hazardous materials always follow these steps before signing for them:

- Verify that you are approved to accept the package.
  - If you did not place the order, or were not given prior authorization to accept it by a supervisor, do not accept or sign for the package.
- Examine the exterior of all packages.
  - If any physical damage is noted; rips, tears, leaking, staining or discoloration do not accept the package.
  - If the package is producing a strong odor contact EHS at (703) 993-8448 for further guidance.
  - If the contents sound loose or broken while handling do not accept the package.
- Review the shipping papers to ensure the items described are present.
  - If the items do not match the description do not accept the package.

If any discrepancies or damages are observed and the shipper refuses to return the package, has left the premises, or is otherwise unavailable, contact EHS immediately and EHS personnel will handle the package in accordance with transportation and safety regulations.

Once the package has been examined and accepted, immediately secure the package in proper storage to prevent theft, loss, or damage. Do not leave the package unsecured.

Do not handle any contents of a hazardous materials package unless you have been properly trained in the hazards that may be present and how to protect your health and safety. If you discover a damaged, leaking or open container of hazardous material after receiving a package immediately contact campus police and inform them of your location and situation. Secure the package in a safe location, if you have access to a fume hood place the package inside and close the sash, and do not attempt any other actions until EHS has made an evaluation of the situation.

## **F. SHIPPING HAZARDOUS MATERIALS**

Both the International Air Transport Association (IATA) and DOT regulate the shipping of hazardous materials and/or dangerous goods transported via road or air, respectively. This includes the transport of all chemicals with the exception of sample amounts (49CFR173.4) between university campuses. Specific training is required and necessary to prepare and package a shipment of hazardous material.

Employees who may be required to ship such items infrequently must contact EHS who will then provide this service. In order for a shipment to be prepared and expedited properly the individual seeking shipment must notify EHS at least five business days for chemical shipments and at least two days for biological materials (including dry ice) in advance of the desired shipping date and provide:

- Itemized list of contents of the package to include volume, weight, and size of the container(s).
- An appropriate shipping container that meets UN packaging requirements (can be purchased through EHS if the department does not have the appropriate containers and the shipment is urgent)
- Dry ice and quantity to be included in the package (if required).
- Package (length, width, height, and weight).
- Insurance for the package (if any).
- Payment information; org and account number or third party FedEx account number to charge the shipment.
- Shipper's name and a 24-hour phone number
- Consignee's (receiver's) name, address, and phone number.

Individuals who ship hazardous materials on a frequent or routine basis must contact EHS to coordinate training for them to perform this task. Under no conditions are students permitted to offer hazardous materials for shipment on behalf of the university.

## Attachment A: Indications of a Hazardous Materials Package



Figure 1. “Square on point” DOT Hazard classification labels

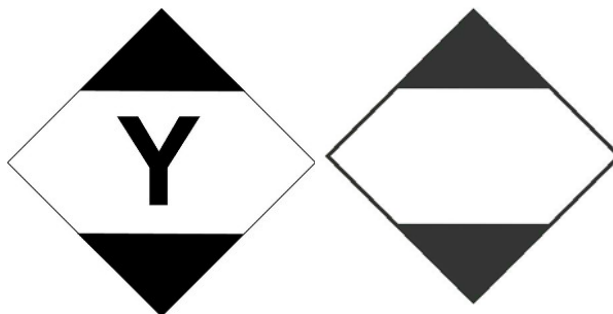


Figure 2. DOT specification packaging with square on point label

**SHIPPER'S DECLARATION FOR DANGEROUS GOODS**

Shipper  Consignee  Two completed and signed copies of this Declaration must be handed to the operator.	Air Waybill No. Page of Pages Shipper's Reference Number (optional)  For optional use for Company logo name and address  <b>WARNING</b> Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.					
<b>TRANSPORT DETAILS</b> This shipment is within the limitations prescribed for: (check non-applicable) <input type="checkbox"/> PASSENGER AND CARGO AIRCRAFT <input type="checkbox"/> CARGO AIRCRAFT ONLY Airport of Departure:  Airport of Destination:	Shipment type (check non-applicable) <input type="checkbox"/> NON-RADIOACTIVE <input type="checkbox"/> RADIOACTIVE					
<b>NATURE AND QUANTITY OF DANGEROUS GOODS</b>						
Dangerous Goods Identification						
UN ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packaging	Quantity and type of packing	Packing Inst.	Authorization
Additional Handling Information						
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable International and national governmental regulations. I declare that all of the applicable air transport requirements have been met.					Name/Title of Signatory  Place and Date  Signature <small>(Ink stamping advised)</small>	

**Figure 3. Hazardous Materials/Dangerous Goods declaration note red and white border**



**Figure 4. Limited quantity labels “Y” designation is for air shipments**



**Figure 5. DOT –E, exempt quantity label, will also contain 4 digit number and material name**