

Shipping and Transport of Dangerous Goods

Purpose

To establish policies, work practices and systematic procedures for ensuring the safe and efficient shipment and receipt of Dangerous Goods \ Hazardous Materials within the University and Health System. The U.S. Department of Transportation (DOT), Federal Aviation Administration (FAA), U.S. Custom and Border Protection, the US Department of Health and Human Services' Centers for Disease Control and Prevention (CDC), the U.S. Postal Service (USPS) and the International Air Transport Association (IATA) all have requirements that influence the shipping of dangerous goods from Temple University and Temple University Health System.

Applicability

Applies to all departments and personnel who ship or receive dangerous goods \ hazardous materials at Temple University (TU) and Temple University Health System (TUHS), to all work conducted under the authority of TU and TUHS. Non-Temple and contractor personnel must follow the provision of this document while working at these facilities.

Responsibilities

Environmental Health & Radiation Safety (EHRS)

- Policy development
- Training as requested by responsible supervisor, manager, or principal investigator
- Maintain a database of all trained individuals by EHRS
- Provide technical assistance and support as requested by a responsible supervisor, manager, or principal investigator

Supervisors, Principal Investigator (PI) Department Heads & Managers

- Assess their site and operations areas to determine whether any materials are offered for shipment, prepared, or received that fall under the Dangerous Goods, Hazardous Materials definition
- Ensure that all employees identified as shipping or receiving personnel attend required training (as listed in the training section) and follow the requirements listed in this document as well as department/hospital specific policies
- Maintain all necessary documentation and training certificates
- Provide appropriate stock of required supplies (shipping containers, forms, etc...) and personal protective equipment (PPE)
- Provide function specific training regarding the safe use, preparation, administration, storage, transportation on shipping or receiving of Dangerous Good or Hazardous Materials. Training must be documented and filed.

Employees who Ship, Offer, Prepare or Receive Dangerous Goods/Hazardous Materials

- Attend required training classes prior to shipping
- Use and maintain safety devices and PPE
- Follow the instructions of the Supervisor, Principal Investigator, Department Head, Manager and EHRS
- Comply with the requirements listed in this document
- Know who to call in any incident involving Dangerous Goods or Hazardous Materials and how to manage spills, releases and personal contamination and exposure
- Obtain additional information regarding safety, security, inventory, and risk of operations as is necessary to fully be informed regarding one's duties and to accurately assess any health-related risk.

Definitions

Dangerous Goods- hazardous chemicals or infectious substances that can pose a significant risk to health, safety, or to property when transported.

Hazardous Material- means a substance or material that the Secretary of Transportation has determined can pose an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of subchapter C of this chapter.

Examples of Hazardous Materials

Class Or Division #	Name of Class or Division	49 CFR Reference
1.1 to 1.6	Explosives	173.50
2.1 to 2.3	Compressed Gases (including liquefied gases)	173.115
3	Flammable (including combustible) liquids (e.g., alcohols, solvents, lubricants, paints)	173.120
4.1 to 4.3	Solids that are flammable, spontaneously combustible, or dangerous when wet (e.g., lithium alkyds, naphthalene, phosphors, calcium hydride, sodium)	173.124
5.1 and 5.2	Oxidizers and organic peroxides (e.g., bromates, chlorates, permanganates, hydrogen peroxide, benzoyl peroxide)	173.127 and 173.128
6.1	Poisonous (e.g., some pesticides, barium compounds, phenol, chloroform)	173.132
6.2	Infectious substances (e.g., cultures and stocks, biological products, and toxins that are derived from plant, animal or bacterial sources and contain or might contain an infectious substance)	173.134
7	Radioactive	173.403
8	Corrosives (acids or bases which are corrosive to the skin and other materials having a pH of ≤ 5.5 or ≥ 11.0)	173.136
9	Miscellaneous hazardous materials (e.g., asbestos, dry ice, PCB's)	173.140
Forbidden	Forbidden Materials	173.21

Note: A material is regulated as a Class 9 environmental hazardous substance if it meets the definition of either hazardous substance or marine pollutant and is not listed in the Hazardous Materials Table nor meets a specific hazard class.

In addition to DOT regulations, the transportation of hazardous materials is also regulated by the International Air Transportation Association (IATA). Also, many carriers also have requirements for transportation hazardous materials.

- Dry Ice- Dry ice is considered by DOT and IATA as “miscellaneous” hazard, class 9. Dry ice is considered hazardous during transportation.
- Operator/Carrier – are individuals, courier companies (ex. UPS, FedEx) or airlines that transport packages from point of origin to point of destination.
- Shipper(Consignor)- one who offers Dangerous Goods/Hazardous Materials for transport
- Receiver (Consignee)- one who receives and signs for packages
- Proper Shipping Name- used to describe a particular article or substance in all shipping documents and where appropriate, on packaging.
- UN number- is of four digits assigned by the United Nations Committee of Experts on the Transportation of Dangerous Goods to identify a substance or a particular group of substances.
- Shipper Declaration Form- legal document signed by the shipper which creates a contract between the shipper and the carrier.
- Category A Infectious Substances - An infectious substance in a form capable of causing permanent disability or life-threatening or fatal disease in otherwise healthy humans or animals upon exposure.
 - Infectious substances also include pathogens present in a list published both by DOT and ICAO/IATA. These substances include:
 - Cultures of pathogens which can cause permanent disability or fatal disease. Examples include Bacillus anthracis (cultures only) and Highly Pathogenic Avian Influenza Virus (cultures only).
 - Known pathogens capable of causing permanent disability or fatal disease if exposed to any amount. Examples include Marburg virus, Ebola virus, Smallpox virus.

Determination that a substance may be a Category A Infectious Substance is based on a combination of the pathogens on the list and upon the shipper’s scientific or medical knowledge.

- Biological Substances, Category B - An infectious substance that is not in a form capable of causing permanent disability or life-threatening disease in otherwise healthy humans or animals.
- Biological Products - are those products derived from living organisms that are manufactured and distributed in accordance with the requirements of national governmental authorities that may have special licensing requirements. They are used

for prevention, treatment, or diagnosis of disease in humans or animals, or for development, experimental or investigational purposes related thereto. They include, but are not limited to, finished or unfinished products such as vaccines and diagnostic products.

- Click [here](#) for a complete listing of the Department of Transportation Definitions

Training

The responsibility to ensure that training is provided, whether to reinstate current employees or to instruct new employees, falls upon the department, PI, or group. Supervisors, Managers and PIs are responsible to see that the training of employees is received and should contact EHRS to make arrangements for training.

Specific training for shipper (consigner)

Individuals who offer Dangerous Goods, Hazardous Materials and dry ice for transport must attend the following training:

- Dangerous Goods, Hazardous Materials and dry ice for transportation training and must become certified by attending the specified training prior to any shipment.
- Security Awareness Training - employee must receive training that provides an awareness of security risks associated with hazardous materials transportation and methods designed to enhance transportation security.
- Function Specific Training-Specific training as it applies to their job duties
- Safety Training- Basic safety training/Hazard Communication on emergency response to incident, PPE, bloodborne pathogen, etc...
- General Awareness/familiarization Training-familiarity with the requirements of all applicable regulations
- In depth security training- employees must be trained concerning the security plan and its implementation. Security training must include company security objectives, specific security procedures, employee responsibilities, actions to take in the event of a security breach and the organizational security structure.
- Refresher training- all employee must also attend refresher training every two years if there is change in job duties or change in regulations.

EHRS will determine the needs for training and provide these training as requested accordingly.

Upon completion of the required course, participants will receive a training certificate to be maintained by their respective departments.

Specific training for receiver (consignee)

Individuals who receive or sign the receiving paper for Dangerous Goods, Hazardous Materials and dry ice must attend the following training:

- Safety Training- Basic safety training/Hazard Communication on emergency response to incident, PPE, bloodborne pathogen, etc...
- Security Awareness Training - employee must receive training that provides an awareness of security risks associated with hazardous materials transportation and methods designed to enhance transportation security.
- Refresher training- all employee must also attend refresher training every three years if there is change in job duties or change in regulations.

EHRS will determine the needs for training and provide these training as requested accordingly.

Packaging and Shipping

- Departments Head, Supervisors, Manager or PIs are responsible to ensure that all Dangerous Goods/Hazardous Materials are packaged, shipped, and received in compliance with the regulations. Detailed information's will be provided in training.
- Departments Heads, Supervisors, Managers or PIs are responsible for obtaining the proper materials necessary to ship Dangerous Goods/Hazardous Materials in compliance with the regulations.
- Departments Heads, Supervisors, Managers or PIs are responsible to ensure that EHRS is notified whenever a Dangerous Good/Hazardous Materials is shipped. EHRS has implemented an electronic notification system. Simply complete Notification of Dangerous Goods form and submit electronically.

Recordkeeping

- Departments are responsible for keeping all shipping documents and training certificates on file for three years.
- EHRS will maintain a database of all employees trained.