

Offsite Shipping (DOT)

University of Tennessee Safety Guide HM-002

Document Contact: EHS-Hazardous Materials

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Purpose

The purpose of this procedure is to provide a framework for those individuals on campus who ship and transport **hazardous materials** or **dangerous goods** for transport following all applicable DOT regulations.

Scope and Applicability

This shall apply to all students, staff and faculty on the UTK campus whenever hazardous materials are shipped or transported off-campus for various reasons. Some of these scenarios include:

- Sending/transporting items to a lab for testing or analysis, or to a colleague for collaborative research
- Sending/transporting specimen materials preserved in ethanol or another flammable solvent
- Sending/ transporting any items on dry ice
- Returning items to a manufacturer
- Carrying an item with you when you travel (e.g. on an airplane)
- Sending/transporting hazardous waste for disposal

This standard applies to all “dangerous goods” and hazardous materials” as defined below.

NOTE: Radioactive materials, infectious agents, and animal or human diagnostic specimens are NOT regulated as hazardous materials/dangerous goods. They are NOT included in this survey because those who ship these materials should already have authorization and training to ship such materials. If anyone who transports or ships these materials has NOT completed training/been granted approval by the Radiation Safety or the Biosafety Office, the applicable office must be contacted as soon as possible at the following phone numbers:

Radiation Safety Office: 974-5580;

Biosafety Office: 974-1938.

Abbreviations and Definitions

Abbreviations

CFR - Code of Federal Regulations

DOT - Department of Transportation

IATA - International Air Transport Association

ICAO - International Civil Aviation Organization

SDS - Safety Data Sheet**Definitions**

Dangerous goods – articles or substances which are capable of posing a significant risk to health, safety, or to property when transported and are classified by ICAO or IATA as dangerous goods

Hazardous materials – “A substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has been designated as hazardous under section 5103 of the Federal Hazardous Materials Transportation law (49 U.S.C. 5103)”. Examples of transporting hazardous materials “in commerce” include: shipment via FedEx or UPS, transportation via public highways, waterways, air, etc.

Shipper – Any person who either prepares or offers a package containing hazardous materials for transportation on a public right-of-way. Preparing a hazardous material for transportation includes: classifying, packaging, marking, labeling, preparing shipping papers and affixing placards depending upon the hazards.

Roles and Responsibilities**Shippers:**

- Shall be properly trained according to applicable DOT and/or IATA requirements before shipping any hazardous materials or dangerous goods for transport. There must be documentation of completed training.
- Must be responsible for accurately identifying the material and any known hazards associated with the item(s) and must follow all appropriate regulations.
- Understand that both the individual and the institution who ship such materials are subject to penalties and fines if these materials are shipped improperly due to lack of training, misclassification, inappropriate packaging, etc.

Department Heads/Employers who have Shippers under their control shall:

- Ensure that their employees are properly trained, following IATA and DOT regulations, to ship dangerous goods, and that their training is kept current.
- Ensure their employees are familiar with UT's policy for transporting hazardous materials and dangerous goods for commerce.

EHS shall:

- Update UTK's DOT dangerous goods and hazardous materials shipment procedure as necessary.
- Serve as a technical resource for questions and comments regarding the shipment of hazardous materials and dangerous goods.
- Assist with the shipment of hazardous materials and dangerous goods.
- Maintain appropriate training for EHS personnel, by meeting requirements specified in 49 CFR 172.700 (DOT) and ensure that training is kept up-to-date.

Hazardous Waste:

If you have any hazardous waste that needs disposed, please do not ship this waste. Please bring hazardous waste to the 90-day waste storage rooms on campus.

Hazardous waste should be brought to the following locations, or contact EHS at 974- 5084 to coordinate a pickup. Waste should never be left unattended outside the waste room.

Walters Waste room (Room M209):

Hours: The first and third Wednesday of every month, 12:45-1:45 p.m.

SERF (Science & Engineering Research Facility) Waste room (at loading dock):

Hours: Every Wednesday, 2:00-3:00 p.m.

Additional Waste Rooms (JIAM, Strong, and Mossman) will be added in 2017-2018

Dates and times to be determined

Recordkeeping

A record of training must be maintained, which includes: individual's name; most recent training completion date; a description, copy of reference to training materials used to meet the training requirement; name and address of organization providing the training and evidence which shows the test was completed satisfactorily. All shipping documents

(i.e. manifests, bills of lading, air bills), and any other shipping documentation should be kept for a period of three years. A copy of any shipping documents involving dangerous goods and hazardous materials shipments should be provided to EHS. If the documents are kept electronically, or in the computer system, they should be capable of being reproduced in a printed manner.

Training and Information

EHS shall provide guidance to any shippers on campus to ensure they have been properly trained before handling and shipping hazardous materials and dangerous goods. If the department head has an employee who ships hazardous materials and/or dangerous goods on a regular basis, they need to send the employee to IATA and/or DOT training, based on their particular situation.

Individuals who are certified to ship dangerous goods by air must receive recurrent IATA training every 24 months. Individuals who are certified to ship hazardous materials must have recurrent DOT training every 3 years.

References

DOT: Department of Transportation (49 CFR)

IATA: Dangerous Goods Regulations

Appendices

Appendix A: DOT Hazard Class Table

Appendix B: Intent to Ship Chemicals Form

Disclaimer

The information provided in these guidelines is designed for educational use only and is not a substitute for specific training or experience.

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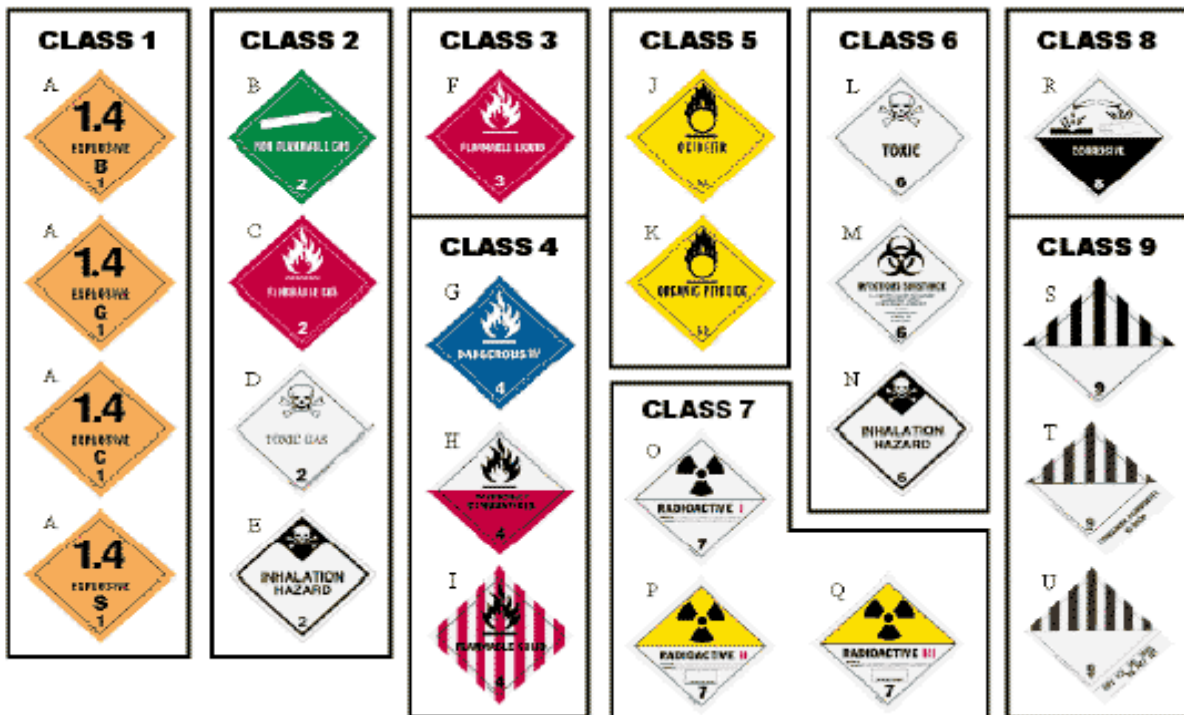
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Appendix A

DOT Hazard Class Table

Hazard Class	Class Division	Label	Label
Class 1	1.1-1.6	orange	Explosives
Class 2	2.1	red	Flammable Gases
	2.2	green	Non-Flammable Gases
	2.3	white	Poison Gases
Class 3	N/A	red	Flammable Liquids <ul style="list-style-type: none"> Liquids with a flashpoint of <141° F. Ex: Acetone, Paint Thinner, Methanol
Class 4	4.1	red striped	Flammable Solids <ul style="list-style-type: none"> Materials that are thermally unstable and can undergo a strong exothermic decomposition even without air.
	4.2	red top white bottom	Spontaneously Combustible Materials
	4.3	blue	Dangerous When Wet Materials <ul style="list-style-type: none"> Ex: Sodium metal
Class 5	5.1	yellow	Oxidizers <ul style="list-style-type: none"> Materials that yield oxygen, and can cause or enhance the combustion of other materials.
	5.2	yellow	Organic Peroxides <ul style="list-style-type: none"> Ex: Sodium Nitrate, Benzoyl Peroxide
Class 6	6.1	white	Poisons
	6.2	white	Infectious Substances <ul style="list-style-type: none"> Biological toxins or agents that cause or may cause disease in humans or animals. Ex: Hepatitis B Virus
Class 7	N/A	yellow-top white-bottom	Radioactive <ul style="list-style-type: none"> Includes materials that are regulated as hazardous under state and federal licenses Includes thorium and uranium compounds Considered acutely hazardous substances Restricted by packaging, quantity, labeling and marking, routes and means of transport.
Class 8	N/A	white-top black-bottom	Corrosive <ul style="list-style-type: none"> Liquid or solid that causes destruction of living tissues within four hours of contact. A liquid that has a severe corrosion rate on steel or aluminum Ex: acids and bases
Class 9	N/A	black striped-top white-bottom	Miscellaneous <ul style="list-style-type: none"> Material that presents a hazard during transport, but does not meet definition of any other hazard class Ex: Dry ice, asbestos



Appendix B

University of Tennessee, Knoxville Intent to Ship Chemicals Form

Please complete form, attach SDS and send to:

EHS (Fax #: 865-974-0094; Phone #: 865-974-5084; e-mail: safety@utk.edu)

Name: _____ Date: _____

Department: _____

Building: _____ Room #: _____

Principal Investigator: _____

Phone #: _____ E-mail: _____

Fed-Ex Account #: _____ Departmental (E) or Grant (R) #: _____

How many chemicals are being shipped? _____

When do chemicals need to be shipped (***please allow 5 working days lead time***): _____

Destination Information

Responsible Receiving Individual: _____

Destination Name: Company/University/Research Affiliate: _____

Department, Building and Room # (if applicable): _____

Address (Number, street, city, state, zip code): _____

Receiver phone: _____

Material Information

Chemical # 1

Chemical name: _____

Total mass/volume of each container or vial (mg, g, kg, mL, L): _____

Total number of Containers or vials: _____

Type of container or vial (please circle one): Glass Plastic Metal

Physical state (please circle one): Solid Liquid Gas

If you have more than one chemical, please use additional form. Please don't forget to attach SDS for each chemical.

Chemical # 2:

Chemical name: _____

Total mass/volume of each container or vial (mg, g, kg, mL, L): _____

Total number of Containers or vials: _____

Type of container or vial (please circle one): Glass Plastic Metal

Physical state (please circle one): Solid Liquid Gas

Chemical # 3:

Chemical name: _____

Total mass/volume of each container or vial (mg, g, kg, mL, L): _____

Total number of Containers or vials: _____

Type of container or vial (please circle one): Glass Plastic Metal

Physical state (please circle one): Solid Liquid Gas

Chemical # 4:

Chemical name: _____

Total mass/volume of each container or vial (mg, g, kg, mL, L): _____

Total number of Containers or vials: _____

Type of container or vial (please circle one): Glass Plastic Metal

Physical state (please circle one): Solid Liquid Gas

Chemical # 5:

Chemical name: _____

Total mass/volume of each container or vial (mg, g, kg, mL, L): _____

Total number of Containers or vials: _____

Type of container or vial (please circle one): Glass Plastic Metal

Physical state (please circle one): Solid Liquid Gas