

# University of Tennessee Safety Policy

Policy Subject: <b>Dangerous Goods (Hazmat Shipping) Policy</b>	Approval Date: 6/1/2015
Next Scheduled Review: 5/1/2018	Date Effective: 6/1/2015
Contact Information: Policy Owner: Environmental Health and Safety Sr. Environmental Coordinator	

## 1.0 Purpose, Applicability, and Scope

- 1.1 Universities and colleges nationwide are experiencing increased scrutiny of their hazardous materials (HM) and dangerous goods (DG) shipping practices. At the same time HM/DG shipping requirements are becoming more and more complex. In several recent cases, campuses have been penalized with fines for errors in their shipments and documentation. As a result, the University of Tennessee Knoxville requires that all shipments of hazardous materials must follow the regulations set forth by the International Air Transport Association (IATA) and the U.S. Department of Transportation (DOT). Because of these reasons, only qualified, trained personnel are allowed to ship hazardous materials at the UT Knoxville campus.
- 1.2 Applicability – This shall apply to all faculty, staff and students in all departments on the University of Tennessee Knoxville campus who wants to transport HM is affected by HM regulations. For example:
  - a. A researcher sending samples to collaborating persons at other research, hospital or teaching institution,
  - b. A researcher forwarding materials to a field station for an upcoming project,
  - c. Administrative personnel returning or forwarding an order.
- 1.3 Scope – This can include (but not limited to): hazardous substances, hazardous waste, marine pollutants and elevated temperature materials. Also included are laboratory chemicals, radioactive materials, compressed gases, biological agents, diagnostic specimens, refrigerants and instruments or equipment that might contain hazardous materials. Materials that are shipped to labs for testing or analysis, to a colleague for collaborative research, to another research facility, returned to the manufacturer or sent to a field research site are included as well.

## 2.0 Abbreviations, Acronyms, and Definitions

Hazardous materials (also referred to as Hazmat, or HM) Hazardous materials are generally defined as any substance that could adversely affect the safety of the public, handlers, or carriers during transportation. The terms hazardous materials and dangerous

goods are often used interchangeably when discussing the shipment of hazardous chemicals.

Dangerous Goods: Substances or materials that are capable of posing a risk to health, safety, or property, as defined in the International Air Transport Association (IATA) regulations.

### **3.0 Roles and Responsibility**

Departments shall:

- Ensure all employees follow the requirements in the Dangerous Goods policy.
- Ensure all invoices are paid to the third-party vendor on time.

Principal Investigators and/or Supervisors shall:

- Ensure all charges for hazmat shipments, including time, materials and services for shipping hazmat materials, is paid on time to the third party contractor.
- Ensure that hazmat material is shipped according to DOT and IATA regulations by only trained employees.
- Responsible for making sure there are no applicable export control restrictions, and if Materials for Transfer forms need to be completed.

Environmental Health and Safety shall:

- Manage contract with third party vendor to prepare and ship hazmat material from the UT Campus.
- Revise and update Dangerous Goods Shipment Policy and Request to Ship forms on a routine basis.
- Receive hazmat materials and ensure all information is complete on the Request to Ship forms.
- Offer guidance to departments with questions pertaining to Dangerous Goods shipment management.
- Maintain copies of all paperwork pertaining to hazardous materials shipments.

Third Party Vendors shall:

- Prepare and ship hazmat materials following all applicable federal regulations and standards.
- Maintain training certifications for IATA and DOT shipper requirements.
- Maintain all shipping records for all shipments completed for UT Knoxville and provide EHS and the requesting department with copies of the shipment documentation.
- Invoice departments directly for services rendered.

### **4.0 Procedure**

**How do I know if a material is a Dangerous Good / Hazardous Material?**

It is the responsibility of the person who initiates the shipment of a material to determine (or seek assistance to determine) if the material meets the definition of a dangerous good/hazardous material.

To determine if a material is regulated by the DOT, the following references in Title 49 of the Code of Federal Regulations (49 CFR) must be checked to see if the material is listed and/or if the material fits one of the hazard class definitions:

- § 172.101 Subpart B—Table of Hazardous Materials and Special Provisions
- § 173, Subparts C, D, & I – § 173.2 Hazardous materials classes and index to hazard class definitions.

If you are unsure, you may contact [hazmat-shipping@utk.edu](mailto:hazmat-shipping@utk.edu) or contact EHS at 974-5084 for guidance.

**Activities that constitute hazardous material/dangerous goods shipping:**

1. Mailing an HM/DG off campus, out of state or out of the U.S.
2. Shipping an HM/DG off campus, out of state, or out of the U.S. via a carrier such as Federal Express, United Parcel Service, Express Mail, etc.
3. Carrying an item with you when you travel, for example, on an airplane.  
In addition, any time you move or send a hazardous material or dangerous goods from one location to another, you are potentially shipping a material.

Depending upon material quantity and type, restrictions may apply even to dangerous goods being moved to and from off-site facilities during research activities.

International shipments have even more complex restrictions with very serious consequences for errors.

Shipping hazardous materials is regulated by numerous governmental and non-governmental organizations. In addition to potential public safety implications, each violation of the regulations may result in a civil penalty of up to \$30,000. A violation can result in five years imprisonment and penalties of \$250,000. Persons who willfully violate the regulations may be subject to criminal prosecution with penalties of up to \$500,000 and/or five years imprisonment.

**Shipment Request Procedure:**

- Complete a Request to Ship form (Appendix A) and e-mail all shipment requests to [hazmat\\_shipping@utk.edu](mailto:hazmat_shipping@utk.edu). The e-mail request is sent to all safety departments (Radiation Safety, Bio Safety and EHS) and then the appropriate party reviews the request. Shipments will not be coordinated by EHS, Radiation Safety, or Biosafety until a fully completed Request to Ship form and a copy of the SDS (Safety Data Sheet) is attached. The safety departments will then evaluate and determine if the material can be shipped and the best means to do so. EHS will not ship any chemicals they deem as unsafe for transport, according to DOT and IATA regulations.

- Use appropriate containers. Please package hazardous materials properly for transport. This includes using containers with airtight lids. Corks, cotton plugs, tape, or parafilm are not acceptable lids. The outside of the containers must be clean and free of chemical contamination.
- Ensure all containers are accurately labeled with exact names as well as exact contents (including percentages of each chemical if it is a mixture).
- Items for shipment must be delivered to the Environmental Health and Safety office on 2111 Terrace Avenue *in person*, once you receive email confirmation that they have received your paperwork and it is complete. Make sure the packages are not sealed so that the contents of the package can be inspected.
- Dangerous goods shipments at the UT Knoxville campus are completed by a third-party vendor, who works with EHS. Departments will need to pay for this service, as well as supplies and any shipping charges (i.e. Fed-ex charges).
- In order to allow time for the shipment of chemicals, there will be *five working days lead time* in order to have time to prepare, package and ship the chemicals for domestic shipments and *ten working days lead time* for international shipments. Rush shipments will require additional fees for services.
- International shipments will be forwarded by EHS to the Office of Research Export Control officer for approval before the material may be prepared for shipment.
- **Shipments will not be made on Fridays.** This will require some planning ahead on the part of the requester to ensure their shipment arrives on time.
- Packaging materials and container(s) must be provided by the department seeking service, or the department will need to pay the third-party vendor for packaging supplies. If EHS or the consultant must order packaging supplies, this cost will be transferred to the department for payment.

### **Shipment of Virgin (Stock) Chemicals:**

Laboratories should not rely on EHS for shipment their virgin stock chemicals used to support their research activities at other locations. It is almost always more cost-effective and efficient to have lab/research supplies delivered directly to the location at which they will be used. Advance planning and coordination with the off-site location, will in most instances make this feasible. Reminder: Researchers are responsible for the proper disposition of any materials remaining from off-site activities (follow the off-site agency's procedures for disposal or shipment).

EHS strongly recommends exploring all alternatives before shipping chemicals. Shipping by air should be a last resort. Please note that departments are responsible for paying all shipping costs (i.e. FedEx, UPS) associated with shipping the chemicals.

1. If possible, order the chemicals from Fisher, Sigma, or other chemical distributors and have them ship directly to the destination. In many cases, chemicals can be shipped overnight and received the next day.
2. If you are traveling to a university or to another laboratory check with them to see if they might have the chemicals in stock.
3. If you are sending samples to a laboratory, check with them regarding their shipping requirements.
4. If you are doing collaborative research at Oak Ridge National Laboratories, EHS strongly encourages that you contact their shipping department for assistance.

## Biological Agents Shipment Policy

As with chemical agents, shipping of materials of biological origin are subject to a variety of shipping requirements as mandated by the DOT and IATA. In addition, the interstate transport, import and export of biological materials may be subject to further permitting guidelines as put forth by the United States Centers for Disease Control (CDC), United States Department of Agriculture (USDA) and various state and local agencies. Please contact the Office of Biosafety to determine with which agencies must be notified and if permits may be required prior to beginning the shipping process.

## Shipping Biological Agents

Based on definitions put forth in the IATA Dangerous Goods Regulations biological agents fit into one of five categories:

1. **Not Regulated:** materials of biological origin that are not recombinant and that considered infectious (e.g., dried blood spots, formalin fixed tissues, environmental samples if there is no reason to expect the presence of a pathogen).
2. **Exempt:** Low risk patient or animal specimens with minimal likelihood of infectious agents
3. **Biological Substance, Category B:** Agents capable of causing human disease, but unlikely to pose a serious hazard for human, animal or plant health (i.e., Risk group 2 organisms) due to the availability of preventative and therapeutic measures.
4. **Biological Substance, Category A:** Microbiological cultures, patient or environmental specimens that contain or are likely to contain agents that pose a serious risk to human, animal, or plant health. For a list of the specific agents and assistance with Category A Infectious Substances, please contact the Office of Biosafety.
5. **Genetically modified Organisms:** Cultures of risk group-1 microorganisms that contain recombinant DNA molecules.

Agents that fall under category 1 (Not Regulated), may be prepared and shipped by lab personnel without the need of specific training. These agents should be prepared using the triple pack method and do not require specific packaging labels or instructions. If you are unsure of shipping under this classification or require assistance in packaging, please contact the office of Biosafety.

Agents from all other categories must be prepared and shipped by trained personnel. The Office of Biosafety provides training for groups that plan to engage in the regular shipping of biological materials and will prepare and arrange for the shipment of packages on the behalf of groups that ship materials infrequently.

## 5.0 Recordkeeping

EHS will maintain copies of all paperwork associated with shipments made by the third-party contractor and/or EHS for at least three years. All departments who ship, or request a third-party contractor to ship, must have copies of all paperwork associated with the shipments, including (but not limited to): training certifications, declarations of shipment, commercial invoices, and other documents pertaining to the shipment.

The third-party shipper will also retain copies of all shipment records for at least three years after shipments are completed. They will give EHS copies of all shipping documentation and the most recent copies of their IATA and DOT certifications.

## **6.0 Training**

Any person who ships hazardous materials for the University of Tennessee must possess current applicable certifications (DOT, IATA).

## **7.0 Attachments**

Appendix A – Request for Shipment

## **8.0 Associated Standards**

IATA: International Air Transport Association

DOT: Department of Transportation

## **9.0 Disclaimer**

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

The University of Tennessee Knoxville and the authors of this policy assume no liability for any individual's use of or reliance upon any material contained or referenced herein. The material contained in this policy may not be the most current.

This material may be freely distributed for nonprofit educational use. However, if included in publications, written or electronic, attributions must be made to the author. Commercial use of this material is prohibited without express written permission from the author.

University of Tennessee Knoxville

Request to Ship Hazardous Chemicals Form

Please complete form, attach SDS and send [hazmat\\_shipping@ukt.edu](mailto: hazmat_shipping@ukt.edu)). Once you receive e-mail confirmation from EHS, you must deliver the chemicals to the EHS Office on 2111 Terrace Avenue between the hours of 8:00 a.m. and 4:00 p.m.

It is up to the Principal Investigator to ensure there are no applicable export control restrictions, and if a **Materials for Transfer form** needs to be completed. For international shipments, and other exporting requirements, contact Dairin Malkemus, Export Control Officer at (865) 974-0232 or [dmalkemu@utk.edu](mailto: dmalkemu@utk.edu) for help with determining whether any export control restrictions may apply.

Name of Requestor: \_\_\_\_\_ Date: \_\_\_\_\_

Department: \_\_\_\_\_

Building: \_\_\_\_\_ Room #: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_

Lab Phone #: \_\_\_\_\_ Cell phone #: \_\_\_\_\_ E-mail: \_\_\_\_\_

(We need a reliable way to reach the requestor if there are any questions)

How many chemicals are being shipped: \_\_\_\_\_

Departmental (E) or Grant (R) #: \_\_\_\_\_

Departmental Billing Address:  
\_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Accounts Payable Contact in Department \_\_\_\_\_ e-mail: \_\_\_\_\_ Phone #: \_\_\_\_\_

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

Is this shipment International? \_\_\_\_\_

If this is International, what is the declared value (in U.S. dollars)? \_\_\_\_\_

Other Information: \_\_\_\_\_  
\_\_\_\_\_

**Destination Information:**

Responsible Receiving Individual:

\_\_\_\_\_

Destination Name: Company/University/Research Affiliate:

\_\_\_\_\_

Department, Building and Room # (if applicable): \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone #: \_\_\_\_\_

Would you like e-mail notifications sent when the package has been shipped and delivered? (Please list up to three e-mail addresses)

\_\_\_\_\_

When is the best time and what is the best means to contact you if EHS has a question?

\_\_\_\_\_

I have acknowledged that the information on this form is correct to the best of my abilities.

\_\_\_\_\_

Printed Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

Signature of Safety Office Representative (EHS, Radiation Safety or Biosafety) granting approval of shipment.

\_\_\_\_\_

Printed Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

**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

Is chemical in original outer packaging? \_\_\_\_\_ Do you have original shipping documents? \_\_\_\_\_

If so, please include those documents with the Request to Ship form.

**Please don't forget to attach copy of SDS**

**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

Is chemical in original outer packaging? \_\_\_\_\_ Do you have original shipping documents? \_\_\_\_\_

If so, please include those documents with the Request to Ship form.

**Please don't forget to attach copy of SDS**

**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

Is chemical in original outer packaging? \_\_\_\_\_ Do you have original shipping documents? \_\_\_\_\_

If so, please include those documents with the Request to Ship form.

**Please don't forget to attach copy of SDS**

**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

Is chemical in original outer packaging? \_\_\_\_\_ Do you have original shipping documents? \_\_\_\_\_

If so, please include those documents with the Request to Ship form.

**Please don't forget to attach copy of SDS**

**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

Is chemical in original outer packaging? \_\_\_\_\_ Do you have original shipping documents? \_\_\_\_\_

If so, please include those documents with the Request to Ship form.

**Please don't forget to attach copy of SDS**

**Chemical # 6**

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

Is chemical in original outer packaging? \_\_\_\_\_ Do you have original shipping documents? \_\_\_\_\_

If so, please include those documents with the Request to Ship form.

**Please don't forget to attach copy of SDS**

**If you have additional chemicals, please use additional forms.**