

UNMC HAZARDOUS MATERIAL/ DANGEROUS GOODS SHIPPING PLAN

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**ENVIRONMENTAL HEALTH
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Hazardous Material/Dangerous Goods (HM/DG) Shipping Plan

Basis for the plan

The shipment and transport of Hazardous Materials / Dangerous Goods is a serious matter and requires University of Nebraska Medical Center (UNMC) and Nebraska Medicine (NM) compliance with Department of Transportation (DOT), International Air Transport Association (IATA) and Transportation Security Administration (TSA) regulatory requirements.

The [Department of Transportation](#) (DOT) in [Title 49](#) of the Code of Federal Regulations (CFR) regulates and provides instructions for all modes of transportation. In addition, the [International Civil Aviation Organization](#) (ICAO), [International Air Transport Association](#) (IATA), imposes more stringent requirements for air transportation by providing technical instructions. Violations of these regulations may result in fines as follows:

(a) A person who knowingly violates a requirement of the Federal hazardous materials transportation laws, an order issued thereunder, subchapter A or C of chapter I, subtitle B, of this title, or a special permit or approval issued under subchapter A or C of chapter I, subtitle B, of this title is liable for a civil penalty of not more than \$78,376 for each violation, except that—

(1) The maximum civil penalty for a violation is \$182,877 if the violation results in death, serious illness, or severe injury to any person, or substantial destruction of property and

(2) A minimum \$471 civil penalty applies to a violation related to training.

(b) When the violation is a continuing one, each day of the violation constitutes a separate offense. 49 U.S.C. 5123.

Export Control of Hazardous Material/Dangerous Goods

HM/DG, which could include chemicals, chemical kits, patient specimens, blood samples, rechargeable batteries (lithium, etc.), pharmaceutical products and biological specimens, that are being shipped internationally, may be regulated under the export control federal requirements. Shipments of these materials require an export control evaluation prior to shipment. Please see the attached [Export Control Policy](#).

Definitions

Hazardous Materials (HM) are substances or materials which can pose an unreasonable risk to health, safety, and property when transported in commerce, by ground or air, and which have been so designated by the DOT. The term includes hazardous substances, hazardous wastes, marine pollutants, and elevated temperature materials as defined, materials designated as hazardous under 49 CFR 172.101, and materials that meet the defining criteria for hazard classes and divisions in 49 CFR Part 173.

Dangerous Goods (DG) are defined as those goods which meet the criteria of one or more of nine hazard classes or are articles or substances which are capable of posing a significant risk to health, safety or to property when transported by air and are classified by ICAO or IATA.

Hazard Classes are categories of hazards which are assigned to HM/DG. All regulated material will fit within one of the classes

1. **Explosives**
2. **Gases**
3. **Flammable liquids**
4. **Flammable solids**
5. **Oxidizing substances**
6. **Toxic chemicals and Infectious substances.**
7. **Radioactive material**
8. **Corrosives**
9. **Misc.**

Hidden Dangerous Goods. Products may contain Dangerous Goods which are not readily apparent. If you are shipping any of the following please contact EHS for further determination.

- Electronic products, mobile phones and accessories, photographic equipment, torch/flashlight, dry batteries, **lithium batteries**, prototype lithium batteries, rechargeable batteries, wet cell batteries, alkaline batteries, batteries contained in equipment, speaker, solar charger or ultra-capacitor.
- Personal care products, cosmetics, perfume, nail polish, household chemicals, cleaning agents, aerosols, bleach, drain cleaners, pesticides, wax, toolbox, glue, spray paint, lubricants, lighter fluid.
- Motor vehicles, motorcycles or electric vehicles parts, engines, lawn mowers, generator, carburetor, fuel tank, fuel, fuel controllers, fire extinguishers, air bag, ships or aircraft parts, barometers.
- Agricultural or industrial chemicals, chemicals with strong odor or volatile chemicals, metal powder, pigment, flammable solids, oxidizers, toxic or corrosive substances, pesticides, compressed gases, flammable liquids, resins, inks, paints, sealants, adhesives, mercury.
- Medical equipment, radioactive substances, pharmaceuticals raw materials, vaccines or virus samples, compressed gases, cryogenic liquefied gases, dry ice, sphygmomanometer, thermometers.
- Electrical appliances, refrigerators, air conditioners, vacuum tube, magnetic tubes, magnets, smoke detectors.

Aviation Regulated Solids or Liquids are any material, which has narcotic, noxious, irritating or other properties such that, in the event of spillage or leakage on an aircraft, could cause extreme annoyance or discomfort to crew members so as to prevent the correct performance of assigned duties.

Chemicals are transported to, from and within UNMC for a variety of reasons. This can include sending chemicals to collaborating universities or companies, returning products to manufacturers, faculty shipping chemicals off-site to other institutions when accepting a new position, and when laboratories move from one building to another on-site.

Please contact EHS for guidance in determining which chemicals are regulated by DOT or IATA. Chemicals that are not regulated may be shipped by the employee. Chemicals that are regulated must be shipped by EHS. UNMC/NM employees, or their departments are responsible for all costs associated with transporting chemicals.

Dry ice (Carbon dioxide, solid) is listed as a dangerous good by IATA and DOT when shipped by air. Therefore, when dry ice is shipped by air, as a refrigerant for dangerous and non-dangerous goods, it must be packaged in accordance with IATA and DOT regulations.

Infectious substances are substances which are known or are reasonably expected to contain pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, rickettsia, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

- **Category A:** An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life threatening or fatal disease in otherwise healthy humans or animals. Infectious substances meeting this criteria which causes disease in humans or both humans and animals must be assigned to UN2814, Infectious substance, affecting humans. Infectious substances which cause disease only in animals must be assigned to UN2900, Infectious substances, affecting animals.
- **Category B:** An infectious substance which does not meet the criteria for inclusion into Category A. Infectious substances in Category B must be assigned as UN3373, Biological substance, Category B.
- **Patient specimens** are those collected directly from humans or animals, including but not limited to excreta, secreta, blood and its components, tissue and tissue fluid swabs and body parts, being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention. Exempt human or animal specimens are patient specimens for which there is minimal likelihood that pathogens are present are shipped as “Exempt human Specimen” or “Exempt animal specimen”.
- **Cultures** are the result of a process by which pathogens are intentionally propagated
- **Regulated Medical Waste** or clinical waste or (bio) medical waste means a 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. Regulated medical waste or clinical waste or (bio) medical waste containing a Category A, Infectious substance must be classed as an infectious substance, and assigned to UN2814 or UN2900, as appropriate with excepted quantity of a chemical constituent.

Radioactive Material means any material containing radionuclides where both the activity concentration and the total activity exceeds the values specified in 10.3.2 of the IATA Dangerous Goods Regulations or the table in 173.436 of the DOT regulations. Contact EHS if you wish to transport radioactive material.

Newly synthesized pharmaceutical/chemical products may contain hidden Dangerous Goods. As these do not have existing Safety Data Sheets (SDS), they must be evaluated based on their chemical characteristics. Please see the [Dangerous Goods Determination Checklist](#). If these are part of an export control review, the checklist is already included in the export control process. If not exported and offered for domestic shipment by air or ground, call EHS at 96356 for help.

Excepted Quantities are small quantities (<30g or 30ml) of hazardous materials that may qualify for reduced shipping requirements. At UNMC, this may be samples preserved in ethanol

or other flammable liquid, or could be test kits, or chemicals in general, may be toxic, oxidizing, corrosive material.

Select Agents are biological agents and toxins that have been determined to have the potential to pose a severe threat to public health and safety, to animal and plant health, or to animal or plant products. 42 CFR Part 73 requires laboratories to be registered by the U.S. Department of Health and Human Services before they can possess, transfer, or receive select agent or organisms or chemical toxins. To comply with this federal mandate, any laboratory considering the transfer or receipt of these agents must first contact the UNMC Biosafety Officer, ext. 9-7774 for guidance on registration and shipment requirements.

Responsibilities

UNMC Environmental Health and Safety

UNMC Environmental Health & Safety Department (EHS) is the point of contact for shipping all hazardous material or dangerous goods. EHS personnel are trained to ship all hazardous materials and dangerous goods. EHS can provide training to other UNMC/NM personnel on Dry Ice, Excepted Quantities and Infectious Substance and will assist in shipping all other hazardous materials or dangerous goods. EHS will meet with, escort, and correspond with FAA or DOT agents if they arrive on campus.

UNMC/NM Personnel wishing to ship Hazardous Materials/Dangerous Goods offsite.

UNMC/NM personnel must not ship a HM/DG without first contacting EHS. If training is available for the HM/DG they wish to ship, EHS staff will provide training information. Personnel must meet all the training requirements (initial or recurrent) before shipping, and must follow all rules and regulations. If training is not available, EHS will help to coordinate shipping.

UNMC/NM Personnel wishing to ship Hazardous Materials/Dangerous Goods onsite.

UNMC/NM personnel can move HM/DG including chemicals from building to building using carts as long as all material is packed compatibly, by hazard class, in sturdy closed containers or boxes. Contact EHS with any questions or for more guidance.

Transportation Companies or Couriers contracted to transport Hazardous Material/Dangerous Goods, including patient specimens

UNMC/NM Departments may hire outside contractors to ship HM/DG provide they have been approved by EHS. These transportation companies and couriers must be knowledgeable of IATA, DOT regulations and meet all necessary requirements in the proper packaging, paperwork, handling and transportation of all hazardous material. Couriers transporting ambient, refrigerated and/or frozen specimens must also be compliant with OSHA, TSA and HIPAA regulations. Specimen couriers should provide specimen transport coolers, spill kits and identification badges. **Note:** Most moving companies are not certified to transport hazardous materials

UNMC/NM employees transporting hazardous material in company vehicles

UNMC/NM employees that transport dangerous good/hazardous materials in UNMC owned vehicles are subject to DOT hazard awareness training. Please contact EHS for training.

Radioactive material cannot be transported in vehicles. Contact EHS if you need to ship any radioactive material.

UNMC/NM employees transporting hazardous material in personal vehicles

UNMC/NM employees may use a personal vehicle to transport exempt human or animal specimens for routine testing provided they have been trained and certified and equipped with specimen transport coolers and spill kits. These specimens can be transported ambient, with cold packs or dry ice.

UNMC/NM personnel must have approval by EHS to transport chemicals, or specimens that are known, suspected, or are to be tested for Category A or B Infectious substances in a personal vehicle.

If you have an accident/incident involving a shipment, please complete the [Incident/Accident Reporting Form](#).

Training

Training is available through EHS for UNMC/NM employees who ship certain HM/DG including Excepted Quantities, Dry Ice and Infectious Substances (Biological substance-Category A, Biological substance- Category B, Diagnostic Specimens, and Regulated Medical Waste). Training is also available for UNMC/NM employees who accept hazardous materials or transport hazardous materials as part of their job. This training can be scheduled by contacting EHS at ext. 9-6356 or 9-2737. If you wish to ship any other hazardous material/dangerous good, please contact EHS for assistance.

Training will be in accordance with 49 CFR 172 Subpart H and IATA requirements. Recurrent training is required every two years. To ensure compliance with the regulations training will cover General Awareness, Function Specific, Safety and if required in-depth Security training. At a minimum it will consist of:

- Applicability to regulations
- Limitations
- Classifications
- Identification
- Packaging
- Packing specifications and performance tests
- Marking and labeling
- Documentation
- Security Awareness

Employees are required to review the training material, pass a test, and attend an in-class training (for initial certification) prior to receiving a certificate of completion.

Additional information for trained and certified personnel

1. Trained and certified personnel must ship packages of Hazardous Material/Dangerous Goods through Mail Services/General Supply, or make arrangements with other couriers to have material picked up from their location.
2. Certified shippers who offer a Category A Infectious substance package for transport must follow the special handling security requirements as outlined in [UNMC-IBC30](#). Please consult this policy prior to shipment. For questions regarding this policy, call Pete Iwen, PhD at 559-7774. Category A dangerous goods can be shipped but must be hand carried to General Supply or Mail Services. **They cannot be left at a drop off location.**
3. Only UN certified shipping containers that comply with the specific hazard, shall be used when shipping regulated material. A package performance test certification, and closure instructions for each type of container used, must be kept on file by the individual shipper and will be audited for compliance.
4. Trained and certified personnel who offer a hazardous material/dangerous good for transportation must provide an emergency response telephone number, if required, (including the area code or international access code) for use in the event of an emergency involving the hazardous material.
 - UNMC has registered with [CHEMTREC](#) to provide an emergency response information. All UNMC/NM shippers will use the CHEMTREC telephone number (800) 424-9300 as the emergency contact number for domestic shipments.
 - If the package is shipped outside the USA and needs an emergency response number, please contact EHS for guidance.
5. Certified shippers must keep a file of shipping documentation (air bills, shipper's declarations, or bills of lading) for two years (domestic shipments) or five years (international shipments) after the acceptance of the material by the initial carrier. These copies must be available for inspection.
6. All certified shippers should utilize the [Dangerous Goods Checklist](#) and [Infectious Substance and Dry Ice Shipping Examples](#) when preparing packages and paperwork. Failure to complete all the steps could result in your package getting rejected. Rejected packages, paperwork and the corresponding corrections, are the responsibility of the shipper of record.
7. UNMC Environmental Health & Safety will conduct annual audits of all shippers to verify compliance with the regulations. The audit will include an inspection of training records, packaging and package certifications, shipping papers and retention of paperwork.