Classifying Biological Materials for Transport

Classifying your biological material is the first step in complying with Federal and International shipping regulations. This brochure explains the different classification categories of biological materials. For information on packing, labeling, and documenting the different types of shipments consult the Shipping Biological Materials Manual or contact EHS for instructions (shipping@ehs.unc.edu).

I. Infectious Substances

The Department of Transportation (DOT) defines infectious substances as substances known or reasonably expected to contain pathogens. This includes patient samples from at risk populations. Infectious substances are further divided into two sub categories.

A. Infectious substance, affecting humans/Infectious substance, affecting animals

Also known as "Category A" infectious substances, these are materials that contain pathogens in a form that, if exposure occurs, are capable of causing permanent, life threatening, or fatal disease in otherwise healthy humans or animals. See the table on page 2 for examples of this category.

B. Biological substance, category B

These are materials that contain pathogens capable of causing infection, but not as severe as described above.

Note: Infectious substance classifications are based on the professional opinion of the shipper (you). If you are unsure which category your infectious substance falls under contact EHS for assistance.

II. Exempt Human Specimens / Exempt Animal Specimens

Human or animal material collected directly from humans or animals (ex: tissue, bodily fluids) not known or expected to contain an infectious substance are classified as Exempt Human and Exempt Animal specimens

Exempt Human and Exempt Animal specimens are not considered hazardous materials by the DOT. However there are specific packing and labeling procedures that must be followed when shipping them.

III. Unregulated Biological Material

Biological materials that do not contain infectious substances or substances that are not likely to cause disease in humans or animals and are not taken directly from a human or animal are considered Unregulated Biological Materials and are not subject to any DOT regulations. Examples of Unregulated Biological materials include: micro organisms which are non-pathogenic to humans or animals, substances where any pathogens have been neutralized or inactivated, and environmental samples such as soil, water, and food.

Note: toxic materials are a separate classification under the DOT hazardous material regulations. Before declaring an item an Unregulated Biological Material you must decide if there are any additional hazards presents such as chemicals or toxins.

Examples of Infectious Substances, affecting humans (Category A)

UN 2814 Infectious substances, affecting humans	*Bacillus anthracis* (cultures only) *Brucella abortus* (cultures only) *Brucella melitensis* (cultures only) *Brucella suis* (cultures only) *Burkholderia mallei – Pseudomonas mallei* – glanders (cultures only) *Burkholderia pseudomallei – Pseudomonas pseudomallei* (cultures only) *Chlamydia psittaci – avian strains* (cultures only) *Clostridium botulinum* (cultures only) *Coccidioides immitis* (cultures only) *Coxiella burnetii* (cultures only) Crimean-Congo haemorrhagic fever virus Dengue virus (cultures only) Eastern equine encephalitis virus (cultures only) *Escherichia coli, verotoxigenic* (cultures only)1 Ebola virus Flexal virus *Francisella tularensis* (cultures only) Guanarito virus Hantaan virus Hantaviruses causing haemorrhagic fever with renal syndrome Hendra virus Hepatitis B virus (cultures only) Herpes B virus (cultures only) Human immunodeficiency virus (cultures only) Highly pathogenic avian influenza virus (cultures only) Japanese Encephalitis virus (cultures only) Junin virus Kyasanur Forest disease virus Lassa virus Machupo virus Marburg virus Monkeypox virus *Mycobacterium tuberculosis* (cultures only) Nipah virus Omsk haemorrhagic fever virus Poliovirus (cultures only) Rabies virus (cultures only) *Rickettsia prowazekii* (cultures only) *Rickettsia rickettsii* (cultures only) Rift Valley fever virus (cultures only) Russian spring-summer encephalitis virus (cultures only) Sabia virus *Shigella dysenteriae type 1* (cultures only)1 Tick-borne encephalitis virus (cultures only) Variola virus Venezuelan equine encephalitis virus (cultures only) West Nile virus (cultures only) Yellow fever virus (cultures only) *Yersinia pestis* (cultures only)