

## **REGULATIONS & PROCEDURES FOR SHIPPING HAZARDOUS MATERIALS**

The regulations and procedures for shipping “hazardous” materials apply to all individuals involved with the transportation/shipping of hazardous materials. This includes all those individuals who arrange for transport and/or may engage in any of the following activities involving hazardous materials:

- Filling packages
- Marking and labeling packages
- Preparing shipping papers, handling, loading, securing and segregating packages within a transport vehicle, freight container or cargo hold, and transporting.

The U.S. Department of Transportation (DOT) enacts and enforces all hazardous materials (hazmat) transportation laws in the United States. Compliance with DOT regulations is a requirement for any person who offers a hazardous material for transportation.

### **Penalties for non-compliance:**

- Penalties for non-compliance with the rules are significant and could result in the following fines: Up to \$250,000 and up to a year jail sentence for individuals; up to \$500,000 per incident for organizations. The major carriers are trained and should be available to help departments in ensuring hazardous materials shipments are properly packaged, marked, labeled and have appropriate shipping papers.

## **GENERAL INFORMATION**

### **Hazardous Materials Background Information:**

The hazardous materials shipper must meet the DOT's hazardous materials regulations (HMR), 49 CFR Parts 171-180, and adhere to the following:

- Check if the chemicals are being shipped or offered for shipment listed in the Hazmat table (49 CFR Subpart B, 172.101)
- Determine to ship Hazmat in small quantity or materials of trade
- Packaging (49 CFR 173)
- Markings (49 CFR 172.300) and Labels (49 CFR 172.400)
- Shipping Papers (49 CFR 172.200)
- Shipping Requirements for Dry Ice
- Shipping Requirements for Liquid Nitrogen

### **Hazmat Shipping Procedures:**

- Shipping procedures must be adhered to if you determine the materials you are going to ship are hazardous materials as defined by the DOT. A hazardous material is defined as any substance or material could adversely affect the safety of the public, handlers or carriers during transportation. All DOT hazardous materials are listed in the [DOT's Hazardous Material Table](#).

- There are nine classes of hazardous materials:

Hazard Class 1: Explosives	1.1 mass explosion hazard 1.2 projectile hazard 1.3 minor blast/projectile/fire 1.4 minor blast 1.5 insensitive explosives 1.6 very insensitive explosives
Hazard Class 2: Compressed Gases	2.1 flammable gases 2.2 non flammable compressed 2.3 poisonous
Hazard Class 3: Flammable Liquids	Flammable (flash point below 141°) Combustible (flash point 141°-200°)
Hazard Class 4: Flammable Solids	4.1 flammable solids 4.2 spontaneously combustible 4.3 dangerous when wet
Hazard Class 5: Oxidizers and Organic Peroxides	5.1 Oxidizer 5.2 Organic Peroxide
Hazard Class 6: Toxic Materials	6.1 Material that is poisonous 6.2 Infectious Agents
Hazard Class 7: Radioactive Material	Radioactive I Radioactive II Radioactive III
Hazard Class 8: Corrosive Material	Destruction of the human skin Corrode steel at a rate of 0.25 inches per year
Hazard Class 9: Miscellaneous	A material that presents a hazard during shipment but does not meet the definition of the other classes

If you determine the shipment to contain a hazardous material you must follow the Hazmat General Shipping Procedures.

### General Shipping Procedures:

- Check if the chemicals you are shipping or offering for shipment are listed in the Hazmat Table 49 CFR Subpart B, 172.101.
  - Hazardous materials (49 CFR 171.8)"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 designated as hazardous under section 5103 of the Federal Hazardous Materials Transportation law (49 U.S.C. 5103)".
  - Information found in the hazardous materials table

- Column 1: mode of transportation restrictions/conditions, using symbols (+, A, D, G, I, W)
    - Column 2: Hazardous materials descriptions and proper shipping names
    - Column 3: Hazard class or division
    - Column 4: UN/NA Identification number
    - Column 5: Packing group [X =PGI, II and III; Y = PG II and III, Z = PG III Only]
    - Column 6: Labels
    - Column 7: Special provisions
    - Column 8: Packaging requirements
    - Column 9: Air transportation
    - Column 10: Vessel transportation
  - Small Quantity Exceptions (173.4)
    - 30 ml for liquids, 30 g for solids or 1 g for 6.1, PGI material of a hazardous material.
    - Materials of Trade Exceptions (173.6)
    - Meet definition in 171.8, 0.5 kg or 0.5 L for PGI material or 30 kg or 30 L for other material
  - If the material is listed in the Hazmat table and it does not fit into any available exceptions then the material must be shipped in compliance with this procedure.
- Packaging (49 CFR 173)
  - UN stamped hazardous materials packaging systems are approved by the United Nations Transportation Board for the transport of hazardous materials and are obligatory for hazardous materials shipping. UN packaging systems are designed and constructed to prevent a release of hazardous material during transportation.
  - To obtain UN stamped hazardous material packaging systems you can contact the following vendors: ULINE [www.uline.com](http://www.uline.com) , Labelmaster [www.labelmaster.com](http://www.labelmaster.com), or Lab Safety Supply [www.labsafety.com](http://www.labsafety.com)
  - In some cases the shipper may provide the packaging system. Ensure that it is UN stamped. Packaging system requirements are specific to the type of hazardous material offered for shipping.
- Markings (49 CFR 172.300) and Labels (49 CFR 172.400)
  - Proper markings and labeling on shipment containers are mandatory for shipping a hazardous material. Note that packages with improper or incomplete information will typically not be delivered to their destination. This could subject you to fines or imprisonment by the US DOT. In addition, such hazardous material packages that are involved in a spill or personal injury during transport can make you personally liable for the incident.
    - Labels and markings must be attached to or printed on the package and durable and printed in English.
    - Any package containing a hazardous material must have the following:
      - Name and address of shipper
      - Name and address of receiver
      - Proper shipping name - column 2 hazmat table
      - Numeric hazard class and division - column 3 hazmat table

- UN/NA ID number (obscured and away from other markings) - column 4 hazmat table
  - Packing Group - Column 5
  - Choose proper label(s) from - Column 6 in hazmat table (Packages may have more than 1 label)
  - Additional info if required (limited quantity, RQ)
- Shipping Papers (49 CFR 172.200)
  - The accurate completion of appropriate shipping papers is required for all hazardous materials shipments and MUST contain the following:
    - Appropriate DOT shipping description including proper shipping name, hazard class, UN/NA ID number and packing group -hazmat table
    - Total Quantity
    - Emergency Response Information (24 hour telephone number)
    - Shipper name and address

#### **Shipments with Dry Ice (solid carbon dioxide):**

- Dry ice, UN 1845, Hazard class 9, is classified by DOT and IATA as a "miscellaneous" hazard, which means it is a material that presents a hazard during transportation. Dry ice is characterized as explosion hazard (releases large volumes of carbon dioxide gas), suffocation hazard (carbon dioxide can create an oxygen deficient atmosphere); and contact hazard (as a cryogen, dry ice causes severe frostbite if contacts with skin).

#### **Hazardous Material Declaration Form**

- A hazardous material declaration form must be filled out for any dry ice shipment whether it contains a hazardous material (dangerous good) or not. This is important to ensure all dry ice shipments are categorized and labeled properly. Samples that contain no hazardous materials can be processed the same day. Samples that contain hazardous material may take up to a week to process. To determine if a material hazardous material access the following link: <http://www.myregs.com/dotrspa/>.
- A [hazardous material declaration form](#) can be obtained from the NYU Mail Services Forms web page.

#### **Packaging**

- Packages for dry ice must allow for the release and venting of gaseous carbon dioxide. The material being shipped, and the dry ice, must be enclosed in a Styrofoam box with a sturdy cardboard outer cover. Shipping companies are not accepting Styrofoam boxes as outer layers.

#### **Labeling**

- The class 9 miscellaneous "dry ice" label is provided free by the carrier. This label satisfies the US Department of Transportation (DOT) and International Air Trade Association (IATA) marking and labeling requirements when accurately completed. The dry ice label must be outside the outer container. Remove or obliterate any existing labels on any box that is being reused.

- Clearly mark outer packaging on the same side with:

<p style="text-align: center;"><b>1- Sender and Recipient</b></p> <p>From: Your Name          Department Name          New York University          Your street address          New York, NY your zip code</p> <p>2- A DOT shipping class 9,          miscellaneous label</p> <p>3- Marking on the label the          following information:          UN1845          Dry Ice          Net weight of dry ice in kilograms.</p>	<p><b>To: Recipient's Name</b>  <b>Address</b>          City, State, Zip</p>
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- These markings are in addition to markings that may be required by the sample if it is a hazardous material.


**Air Bill**

- The carrier air bill must be filled out properly and must be signed by the shipper (you). If the shipment contains a hazardous material, then the Shipper's Declaration of Dangerous Goods (Figure 1) must be signed and included with the shipment.
- Note: a copy of the air bill and Shipper's Declaration of Dangerous Goods must be kept on file for the appropriate period of time as required by DOT. The Shipper's Declaration of Dangerous Goods form may be ordered through the following vendors: ULINE [www.uline.com](http://www.uline.com) , Labelmaster [www.labelmaster.com](http://www.labelmaster.com), or Lab Safety Supply [www.labsafety.com](http://www.labsafety.com)

**When shipping via UPS, you may create the air bill using your department's UPS Campus Ship account.**

Figure 1

**SHIPPER'S DECLARATION FOR DANGEROUS GOODS** (Provide at least two copies to the airline)

<p>Shipper</p>	<p>Air Waybill No. _____          Page of _____ Pages          Shipper's Reference Number          (optional) _____</p>																																
<p>Consignee</p>																																	
<p><b>Two completed and signed copies of this Declaration must be handed to the operator.</b></p>																																	
<p><b>TRANSPORT DETAILS</b>          This document is written in the English language for use where applicable.          (Where applicable, use the appropriate language.)</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <td style="width: 50%;">PASSENGER AND CARGO MANIFEST</td> <td style="width: 50%;">CARGO AIRCRAFT ONLY</td> </tr> </table> <p>Airport of Departure: _____ Airport of Destination: _____</p>	PASSENGER AND CARGO MANIFEST	CARGO AIRCRAFT ONLY	<p><b>WARNING</b>          Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.</p> <p>Shipment Type: (check one) <input type="checkbox"/> <b>NON-HAZARDOUS</b> <input type="checkbox"/> <b>HAZARDOUS</b></p>																														
PASSENGER AND CARGO MANIFEST	CARGO AIRCRAFT ONLY																																
<p><b>NATURE AND QUANTITY OF DANGEROUS GOODS</b> (see Subsections 6.6 and 6.7 of IATA Dangerous Goods Regulations)</p> <p style="text-align: center;">Dangerous Goods Identification</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th style="width: 30%;">Proper Shipping Name</th> <th style="width: 5%;">Class or Division</th> <th style="width: 5%;">UN or ID No.</th> <th style="width: 5%;">Packing Group</th> <th style="width: 5%;">Subsidiary Risk</th> <th style="width: 20%;">Quantity and Type of Packing</th> <th style="width: 5%;">Packing Inst.</th> <th style="width: 10%;">Authorization</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Additional Hazard Information: _____</p> <p style="text-align: center; font-size: x-small;">24 Hr. Emergency Contact Tel. No. _____</p>		Proper Shipping Name	Class or Division	UN or ID No.	Packing Group	Subsidiary Risk	Quantity and Type of Packing	Packing Inst.	Authorization																								
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<p>I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.</p>																																	
<table style="width: 100%;"> <tr> <td style="width: 70%;">Name/Title of Signatory</td> <td style="width: 30%;">_____</td> </tr> <tr> <td>Place and Date</td> <td>_____</td> </tr> <tr> <td>Signature (see entry above)</td> <td>_____</td> </tr> </table>		Name/Title of Signatory	_____	Place and Date	_____	Signature (see entry above)	_____																										
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<p>AIR SEA CONTAINERS, INC. • 2749 N.W. 82ND AVENUE • MIAMI, FLORIDA 33152 • TEL. 305-899-9123 • FAX 305-899-9688</p>																																	

**Useful Links:**

Below are useful links for obtaining additional information regarding shipping hazardous materials. If you have questions or require additional information, please contact a manager at NYU Mail Services at 212-998-1010.

- [Emergency Response Guidebook - 2004](#)
- [The Hazmat Table 49 CFR Subpart B, 172.101](#)
- [The U.S. Department of Transportation](#)
- [UPS Guide to Shipping Ground and Air Hazardous Materials](#)
- [US DOT Office of Hazardous Material Safety](#)