

Preparing Shipments of Dry Ice

Dry ice (carbon dioxide, solid) is a common coolant used when shipping refrigerated or frozen samples, reagents, etc. both domestically and internationally. The U.S. Department of Transportation (DOT) and the International Air Transport Association (IATA) regulate shipments containing dry ice because it is classified as a dangerous good. It is a federal regulation that any individual involved in the shipping of dry ice **must** be trained in DOT Hazardous Materials and IATA Dangerous Goods.

The procedures outlined in this guidance document are specific to dry ice **only**. If you are not certified in DOT and/or IATA hazardous material shipping, please contact EHSS to verify the package has been prepared in accordance with IATA regulations prior to shipment. Please complete the online **[Intent to Ship Form](#)** and an EHSS staff member will contact you and advise on the next steps for preparing the shipment.

Shipping Procedures:

1. PACKAGING

- a. **Package Materials:** Use commercially available packaging intended to ship dry ice.
 - Preferred interior packaging: use a polystyrene foam box (not to be sealed airtight).
 - Preferred exterior packaging: use a cardboard, fiberboard, or wooden box.
 - Use additional packing materials to hold inner contents in place as the dry ice disappears.
- b. **Gas Venting:** Packages must allow for release of carbon dioxide. Never seal dry ice in an airtight container/package.
- c. **Amount of Dry Ice:** Record the mass of the dry ice before adding to the interior packaging.
 - It is recommended to use 5-10 lbs of dry ice per 24 hours of travel.
 - Place dry ice on top of sample(s).

**NOTE: Preferred packing configuration is shown in Figure 1 below.*

2. PREPARE PAPERWORK

- a. **Choose the courier for the package (UPS, FedEx, etc.).**
 - Consult with your budget administrator for the department's preferred vendor.
- b. **Choose and complete the correct Air Waybill.**
 - There are two different Air Waybills for each courier.
 1. Domestic
 2. International
 - Obtain a pre-printed paper Air Waybill for the designated courier from your department office and complete all sections in ink. *Note: If you have any concerns about filling out the Air Waybill, an EHSS staff member can help.*
- c. **Completing a Domestic Air Waybill**
 - For dry ice shipments where the only hazardous item is dry ice:
 1. Check "Yes, Shipper's Declaration not Required"

2. Check “Dry Ice” and fill in the ____ x ____ kg (number of packages and the net quantity of dry ice in kilograms, 1 kg = 2 lbs)

d. Completing an International Air Waybill

- If a dry ice section is not listed on the air waybill, include “UN1845, Dry Ice, ____ x ____ kg (number of packages and the net quantity of dry ice in kilograms, 1 kg = 2 lbs)” under the description of goods.
- Attach a transparent sleeve to the outside of the package and place the completed Air Waybill inside.

e. INTERNATIONAL SHIPMENTS ONLY

- **Complete a Commercial Invoice** *This information is used by Custom officials to clear shipments across international borders. (EHSS staff only)*
 1. When the document is finalized, make four (4) copies, and affix three (3) to the outside of the package using a transparent pocket.
 2. Place one (1) signed copy in between the secondary and outer packaging.
- **Complete a Shipper’s Declaration for Dangerous Goods** *This form must be completed and signed by an authorized shipper. (EHSS staff only)*
 1. When the document is finalized, make four (4) copies, and affix three (3) to the outside of the package using a transparent pocket.
 2. It is recommended to place one (1) signed copy in between the secondary and outer packaging.

3. MARKING AND LABELING PACKAGE

- a. The exterior packaging must be marked/labeled with the following:

- Shipping name and identification number (Dry Ice, UN 1845)
- Net weight of dry ice in kilograms
- Shipper’s name and address
- Recipient’s name and address
- Class 9 Dry Ice Hazard Label

**Note: The Dry Ice Label shown in Figure 2 below satisfies all marking/labeling requirements for dry ice shipments listed above when filled out completely and accurately.*

b. Dry Ice Labels - Provided by EHSS

- Contact EHSS for the appropriate Class 9 label.
- Complete the information on the label in ink.
- Affix to one side of the dry ice-containing package.
 1. Do not adhere the Class 9 label to the top or bottom of the package.

4. PACKAGE DROP-OFF

- a. Hazardous materials shipments will be shipped Monday through Thursday (some exclusions may apply) from 032 Lyman Hall.

- b. EHSS encourages researchers to drop-off their package by 11 am on the day of the shipment to ensure a timely arrival to the destination.

5. PACKAGE VERIFICATION

- a. EHSS will verify the packaging, labeling, marking, paperwork, and finalize any shipping papers.
- b. It is strongly advised that the researcher is available for any questions during the time that the package is dropped off to Lyman Hall until the courier picks up the package.

6. CONFIRMATION

- a. EHSS will coordinate shipment pick-up with the appropriate courier.
- b. EHSS staff will notify the researcher when the courier has picked up the shipment with the tracking number.

7. Documentation

- a. US DOT requires shipping documentation to be retained for a minimum of two years (Air Waybill, Commercial Invoice, and Shipper's Declaration).
- b. EHSS will maintain this documentation when the package is shipped through 032 Lyman Hall.

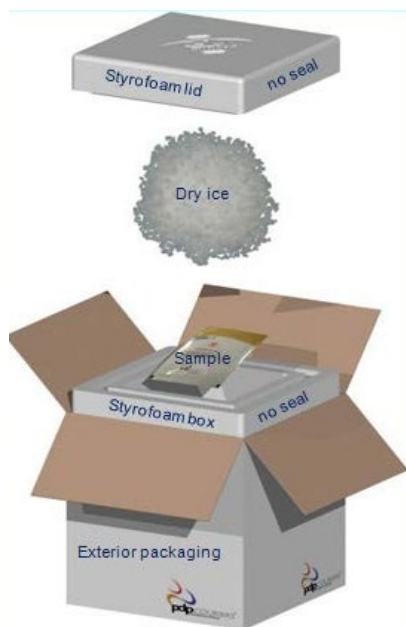


Figure 1. Preferred interior and exterior packaging for dry ice shipments.

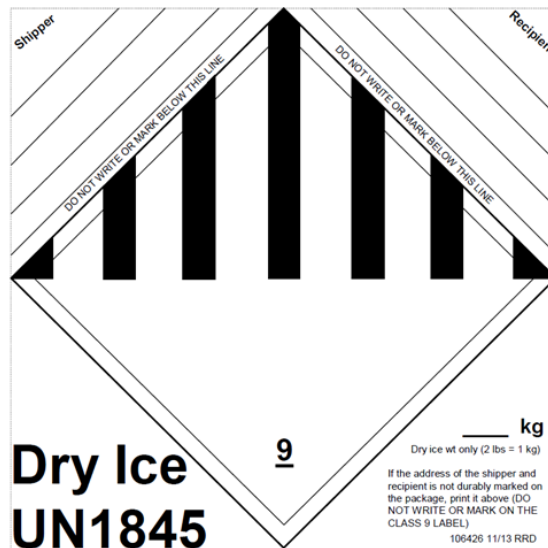


Figure 2. Dry Ice Label. This label satisfies all marking/labeling requirements for dry ice shipments when filled out completely and accurately.