

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. **Sample(s):** Must be placed into a sealable bag to contain all samples. Use compatible materials for both the sample and the dry ice.
- c. **Gas Venting:** Packages must allow for release of carbon dioxide. Never seal dry ice in an airtight container/package.
- d. **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 (FedEx, DHL).**
 - Consult with your budget administrator for the department's preferred vendor.
- b. **Choose and complete the correct Air Waybill.**
 - EHSS can create an electronic air waybill and bill to the PI's departmental FedEx account number, OR
 - The PI can obtain an appropriate pre-printed paper Air Waybill (domestic) 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 Pre-Printed Domestic Air Waybill**
 - Complete Section 1 (From) Sender Name and Address.

- Complete Section 3 (To) Recipient Name and Address.
- Complete Section 4 Express Package Service.
- Select Payment (Bill to) Option in Section 7.
- EHSS will review and complete any blank sections.

d. International Shipments

- A Pre-Printed International Air Waybill will not be accepted. EHSS will generate the air waybill and appropriate paperwork to accompany the shipment.

3. MARKING AND LABELING PACKAGE (EHSS will complete and label the package)

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

- Shipper's name and address
- Recipient's name and address
- Class 9 Dry Ice Hazard Label (includes, Dry Ice, UN1845, and net weight of dry ice in kilograms)

**Note: The Dry Ice Label shown in Figure 2 below satisfies the following marking/labeling IATA requirements including: proper shipping name, UN number, and net weight of dry ice when filled out completely and accurately.*

4. PACKAGE DROP-OFF

- Hazardous materials shipments will be shipped Monday through Thursday (some exclusions may apply) from 032 Lyman Hall.
- EHSS encourages researchers to drop-off their package by 10 am on the day of the shipment to ensure a timely arrival to the destination.

5. PACKAGE VERIFICATION

- EHSS will verify the packaging, labeling, marking, paperwork, and finalize any shipping papers.
- 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

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

7. DOCUMENTATION

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

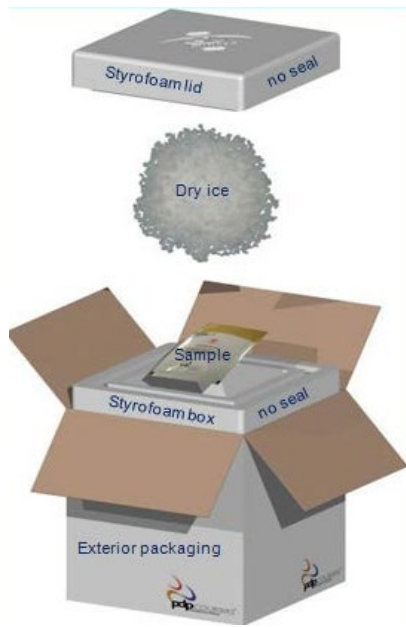


Figure 1. Preferred interior and exterior packaging for dry ice shipments.

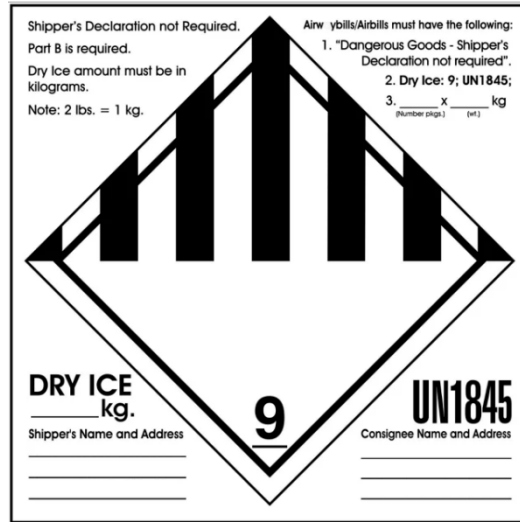


Figure 2. Dry Ice Label.