Category B
shipping quick reference
And Shipping labels
Category B shipment labels

Print this page and cut out labels to affix to box. (packing tape is recommended)
Use wide clear tape to completely cover labels to protect from weather; rain, snow, etc.

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**UN3373**

**BIOLOGICAL SUBSTANCE, CATEGORY B**

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**Dry Ice**

**UN 1845**

Airbills must have the following:
1. UN 1845, Dry Ice
2. Number of pkgs x wt. (kg)

Unless package size is too small, place label on package so that the hazard marking is in a 45-degree angle on point (9).

Dry ice vet only (2 lb = 1 kg)
If the address of the shipper and recipient is not durably marked on the package, print it above (DO NOT WRITE ON OR MARK BELOW THIS LINE OR MARK BELOW THIS LINE).
1. **Leakproof primary receptacle(s):** Cryovial, test tube, eppendorf tube, etc. Petri plate INSIDE a ziploc bag
   - All primary containers must be sealed. Tape or parafilm around tube caps, ziploc bags must be taped, etc
   - Multiple fragile primaries must be wrapped individually to avoid contact

2. **Leakproof secondary packaging,** sealed so that it will not open and spill the contents during transport (outer ziploc bags must be taped shut)
   - There must be sufficient **absorbent** to soak up the total volume if breakage occurred. (Not needed if specimen is solid)
   - Absorbent must be placed inside the secondary package.
   - Must be able to withstand an internal pressure of 95 kPa (internal pressure due to expansion during flight, without exploding)

3. **Rigid outer packaging** that is adequate strength for its capacity, weight, and intended use
   - One surface must be at least 4 inches x 4 inches (or 100mm x 100mm)
Category B Triple Packaging

- Maximum volume of liquid allowed in one **primary receptacle** is 1L
- Maximum volume of liquid allowed in one **package** is 4L or 4kg
- Maximum amount of solid allowed in one **package** is 4kg

- An itemized list of contents must be placed between the secondary container and outer package
- Outer packaging or air waybill must be marked with name and phone number of the person responsible for the package
- The Proper shipping name must be written on the air waybill
  - E.g. UN 3373
Category B Triple Packaging

• The Outer package:
  – must be capable of surviving a drop test at a height of 1.2 meters without leakage from the primary receptacles. The primary receptacles must remain protected in the secondary packaging
    • Manufacturer’s drop test includes
      – A water spray of 5 cm per hour for at least 1 hour, and
      – Stored in an atmosphere of -18°C for a period of 24 hours
• Containers may be re-used if they are in good condition, and have been disinfected
  – If containers are used for items other than infectious substances, all labels and marks for infectious substances must be removed or completely covered
• Remember, using the proper packing materials, package and labels incorrectly can cause the package to be out of compliance
Refrigerants-Wet Ice and Gel Paks

• All refrigerants must be placed outside the secondary packaging

• **Wet ice** should not be used
  – If wet ice is used, it must be placed in a leakproof container, and the outer package must be leakproof
  – Use **gel paks** instead
    • gel paks are unregulated, there are no requirements for marking or labeling the outer package for use of gel paks
    • But, it’s difficult to achieve and maintain lower temperatures
Refrigerants-Dry Ice

• **Dry Ice: Class 9 Dangerous Good**
  – An insulated package must be used
  – May not be placed inside a sealed primary container
  – The secondary container must be secured such that the original orientation is maintained after the dry ice melts
  – The outer package must be capable of venting gas to prevent the build-up of pressure
  – Arrangements must be made between shipper and carrier to ensure proper ventilation
  – On the outside of the outer package:
    • A Class 9 Miscellaneous Dangerous Goods hazard label
    • A UN 1845 Dry Ice handling label, including the weight of the dry ice in the package
How Much Dry Ice Should Be Included?

• Recommendation:
  – Dry ice will sublimate from a solid to a gas at a rate of 5-10 pounds (2.27-4.54 kg) per 24 hours when shipped in an appropriate insulated cooler
  • Actual time will vary depending on:
    – Package used
    – Volume and density of the dry ice
  – Refer to package manufacturer’s recommendations to determine the correct amount of dry ice to include in your shipment.
UPS Packaging Quantity Limits

- The weight entered for dry ice must be less than the total weight of the shipment.

- Packages designated for **diagnostic or medical purposes**
  - UPS “Blue Label” is required for shipments designated for diagnostic or medical purpose.

- Packages containing **non-medical, non-hazardous** materials must be 2.5 kg (5.5 pounds or less)
  - If greater than 2.5kg (5.5 pounds) a separate UPS hazardous material agreement is required. Contact UM Procurement for additional details.
Hazard and Handling Labels

• Hazard Labels:
  – Identifies the Dangerous Good
  – Indicate Class or Division of the Dangerous Good
  – Always a square set at a 45° angle
  – Must use the hazard label specific to the Dangerous Good

• Handling labels:
  – Instructions for handling the package
  – Various shapes and sizes
  – Requirements vary by type of Dangerous Good, amount, etc.
The outside of a package containing Category B infectious substances must bear 2 labels or the 1 combined label.

UN 3373 Hazard label

Biological Substance, Category B handling label
All packages must have complete shipper and receiver addresses.

All packages containing dry ice must have:
- Class 9 Miscellaneous Dangerous Goods label
- Dry Ice label, includes the mass of the dry ice
- Orientation label, for shipments that include more than 50 mL of liquid
- 2 labels, placed on opposite sides of the package
- The arrows must be oriented with the primary receptacles

The name and phone number of the person responsible for the shipment; on the outside of the package or on the air waybill.
Proper Packaging of A Shipment Including Dry Ice

- Place labels on vertical side of box (not top or bottom)
- Ensure shipment will arrive during business hours
- Ensure packaging is constructed for proper venting (unvented dry ice can explode)

Must include the words “Dry Ice” written or printed and “UN1845”

Must use a Class 9, dry ice label for all dry ice packages

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New Requirement: No vertical line between black stripes and white area

Do Not Forget the Shipment Specific Labels
Based on What is Being Shipped (e.g. Cat B, Exempt or GMMO)