



Environmental Health & Safety
New Mexico State University
MSC 3578, Box 30001
Las Cruces, NM 88003-8001
Office: (575) 646-3327 Fax: (575) 646-7898

DRY ICE SHIPPING PROCEDURE

Dry ice (Solid Carbon Dioxide) is classified as a Hazardous Material by the U.S. Department of Transportation (DOT) and anyone who ships dry ice (or any other hazardous material) must have applicable initial and recurrent training per 49 CFR 172.700-172.704. NMSU employees who ship dry ice must be properly trained and certified by NMSU EH&S before shipping packages containing dry ice. The process for becoming a certified dry ice shipper is described in the Employee Certification & Training Requirements section of this procedure. This procedure also provides detailed instructions on preparing a package containing dry ice for shipment by common carriers such as Federal Express (FedEx) or the United Parcel Service (UPS) as well as the requirements for notifications and shipping record retention.

NOTE: *This procedure only applies to packages that contain dry ice only and contain no other material that is classified as Hazardous Material under Department of Transportation (DOT) regulations. All other hazardous material shipments must go through EH&S per the [Hazardous Materials Shipping Procedure](#).*

These instructions include guidance needed to ship dry ice via:

1. FedEx Air
2. FedEx Ground
3. UPS Ground

NMSU is not currently approved to ship hazardous material by UPS Air. If you need to ship dry ice using any other method contact EH&S for further instructions.

EMPLOYEE CERTIFICATION & TRAINING REQUIREMENTS

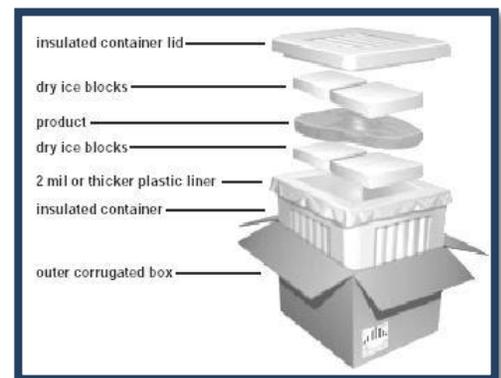
To ship dry ice, employees must first be certified by NMSU EH&S as authorized, trained dry ice shippers. In order to be certified employees must complete the NMSU Dry Ice Shipping training offered online through NMSU Training Central. This training covers all the general and function specific training required to be certified to ship packages containing dry ice. Retraining is required every 2 years in order to maintain the certification.

SHIPPING REQUIREMENTS

1. Packaging

All dry ice shipments (air and ground) will be packaged according to the following requirements. (See **Figure 1** for example of proper packaging)

- A. Packages must allow for the release of carbon dioxide gas to prevent rupture to the package.



Contact EH&S for additional information at (575) 646-3327 or ehs@nmsu.edu

Revised January, 2017

- B. Dry ice must never be sealed in a container with an airtight seal such as a jar or a plastic bag.
- C. Use good quality fiberboard, plastic or wooden boxes.
- D. Use a layer of Styrofoam within a box for insulation. Ensure the Styrofoam is not sealed to be airtight. Styrofoam may not be used as an outer package.
- E. The maximum amount of dry ice per package is 200 kg (441 lbs).
- F. Secure the samples in each package so they will not move freely inside of the box.

PACKAGE MARKING, LABELING AND SHIPPING PAPERS

Requirements vary by shipping mode and carrier. The two most common methods are described below; FedEx Air and Ground (FedEx and UPS).

1. Shipping by FedEx Air

A. Marking Required on Package

- 1. The Proper Shipping Name, **Dry Ice**. The proper shipping name must be on the same surface of the package as the Class 9 hazard class label.
- 2. UN 1845 in appropriate size font
 - a. Minimum Marking Sizes
 - o Package capacity > 30kg requires 12mm(34pt) type or larger
 - **UN 1845**
 - o Package capacity > 5kg up to 30kg requires 6mm(17pt) type or larger
 - **UN 1845**
 - o Package capacity < 5kg should be of adequate size
 - o Other markings should reflect the same font size as UN1845
- 3. Net Quantity of dry ice in the package or overpack, in kilograms.
- 4. Name and address of both the shipper and recipient (see FedEx Shipping Dry Ice document for acceptable markings).

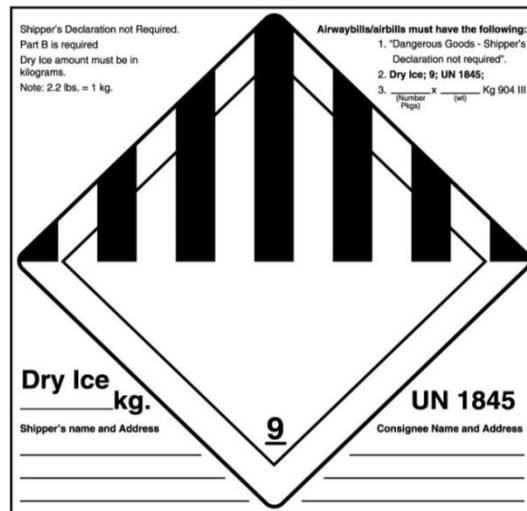
B. Labeling Required on Package – A Class 9 label is required, **Figure 2**. (See FedEx Shipping Dry Ice document for variations of label).

C. Shipping Papers – Use the appropriate NMSU department online FedEx Account to generate a shipment. If this does not apply, please contact EH&S.

Use the following steps to create a dry ice shipment (this only applies if there are no other hazardous materials in the shipment).

Step 1 – Log in to the account and go to **Create a Shipment** page.

Figure 1



Contact EH&S for additional information at (575) 646-3327 or ehs@nmsu.edu

Step 2 – Fill in all applicable information in Sections 1 - 4. See **Figure 3**. (In Section 3 – Service Type, these instructions only apply to the first 6 options. Ground will be described below)

Figure 2

My Shipment Profiles [Help](#) [Hide](#)

My shipment profiles (formerly Fast Ship) Select

Ship

1. From [Help](#) [Edit](#)

Polly Wagner, 1620 Standley Drive, ARC C 109E, MSC 3578, Las Cruces, New Mexico, 88003, United States

2. To [Help](#) [Hide](#)

* Country/Location United States

Company Ludlum Instruments, Inc

* Contact name ATTN: Repair & Calibration

* Address 1 501 Oak Street

Address 2

* ZIP 79556

* City SWEETWATER

* State Texas

* Phone no. 5756463327 ext.

[Perform detailed address check](#)

This is a residential address [?](#)

Save new recipient in address book

Save changes in address book

3. Package & Shipment Details [Help](#) [Hide](#)

* Ship date 01/23/2017

* No. of packages 1

* Pricing option [?](#)

FedEx Standard Rate

FedEx One Rate

* Weight [?](#) 10 lbs

Declared Value [?](#) U.S. Dollars

* Service type Standard Overnight

* Package type Your Packaging

Dimensions 12 12 12 in

Save dimensions profile

Include a return label [?](#)

4. Billing Details [Help](#) [Hide](#)

* Bill transportation to NMSUEHS-235

! Alert: Please remember to enter your reference information.

Your reference

[More reference fields](#) [Add an account](#)

P.O. no.

Invoice no.

Department no.

Special Services (optional) [Help](#) [Hide](#)

COD (Collect on Delivery) [+](#)

Dry ice [+](#)

* Total dry ice weight lbs

Dangerous goods [+](#)

FedEx® Delivery Signature Options

Signature type None specified

Hold at FedEx location [+](#)

Pickup/Drop-off (optional) [Help](#) [Edit](#)

You are dropping off your package at a FedEx location.

Shipment Notifications (optional) [Help](#) [Edit](#)

Send an email to yourself, the recipient or others indicating the status of your shipment.

Rates & Transit Times [Help](#) [Hide](#)

Amounts are shown in USD

Select	Service and Transit Time	Your Rate
	Click calculate to get rates and transit times.	Calculate

5. Complete your Shipment [Help](#)

Create a Shipment Profile to store recipient, package and all other details of this shipment for future use.

[Send a Mobile Shipping Label](#)

Save for later **Ship**

Contact EH&S for additional information at (575) 646-3327 or ehs@nmsu.edu

Revised January, 2017

Step 3 (See Figure 4)

- Click on the **Special Services** Section
- Check the **Dry Ice Box**.
- Enter the quantity of dry ice in the package.
- Enter applicable signature type.

Step 4

- Fill in the remaining sections as applicable (Pickup/Drop-off, Shipment Notifications, and Rates & Transit Times).

Step 5

- In Section 5 (See Figure 3), click on the **Ship** button.
- Check the Receipt box.
- Click on **Print** Button to print the label and receipt for shipment. See **Figure 5 & Figure 6**. Follow the instructions to label the package and go to **Step 6**.

Figure 3

Special Services (optional) [Help](#) [Hide](#)

COD (Collect on Delivery) [+](#)

Dry ice [+](#)

* Total dry ice weight lbs

Dangerous goods [+](#)

FedEx® Delivery Signature Options

Signature type

Hold at FedEx location [+](#)

Figure 4 – Shipping Label

Ship LTL Freight Ship History My Lists Reports Integration Manager Administration

Prepare a shipment

1 Enter shipping information 2 **Print label(s)**

Thank you for shipping with FedEx. Your tracking number: **778212501874**

Label

Receipt | [View](#)

Print Create return shipment Edit shipment Cancel shipment Repeat last Create new Schedule a Pickup

ORIGIN: DLRUA (575) 646-3327

SHIP DATE: 23JAN17

ACTWGT: 10.00 LB

DATE: 12/23/16 13:30

DRY ICE: 3.37 KG

BILL SHIPPER

TO: **ATTN: REPAIR & CALIBRATION**

LUDLUM INSTRUMENTS, INC

501 OAK STREET

SWEETWATER TX 79556

PO (575) 646-3327 DEPT

TRK# 7782 1250 1874 TUE - 24 JAN 4:30P

0201 STANDARD OVERNIGHT

TX-US ICE

LBB 79556

J162016101201ur

544J1199714EB

Contact EH&S for additional information at (575) 646-3327 or ehs@nmsu.edu

Figure 5 – Shipment Receipt

FedEx. Shipment Receipt

Address Information

Ship to: ATTN: Repair & Calibration Ludlum Instruments, Inc 501 Oak Street SWEETWATER, TX 79556 US 5756463327	Ship from: Polly Wagner New Mexico State Univ EHS 1620 Standley Drive ARC C 109E, MSC 3578 Las Cruces, NM 88003 US 5756463327
---	--

Shipment Information:
Tracking no.: 778212501874
Ship date: 01/23/2017
Estimated shipping charges: 37.89

Package Information
Pricing option: FedEx Standard Rate
Service type: Standard Overnight
Package type: Your Packaging
Number of packages: 1
Total weight: 10 LBS
Declared Value: 0.00 USD
Special Services: Dry ice
Pickup/Drop-off: Drop off package at FedEx location

Billing Information:
Bill transportation to: NMSUEHS-235
Your reference:
P.O. no.:
Invoice no.:
Department no.:

Thank you for shipping online with FedEx ShipManager at fedex.com.

Step 6 (Records Requirements)

- Send a copy of the Shipment Receipt (Figure 6) to EH&S @ ehs@nmsu.edu .

2. Shipping by FedEx Ground and UPS Ground

A. FedEx Ground

1. Follow all packaging instructions listed on page 1 and 2 in Section A of Shipping Requirements.
2. Because Dry Ice shipments are not regulated for ground transport there are no requirements for Marking or Labeling as described above.
3. For Shipping Papers, follow Steps 1 – 5 listed above for shipping by FedEx Air with the following exceptions:
 - a. In Section 3 – Service Type, choose FedEx Ground.
 - b. In the Special Services Section, check the box for Dry Ice, however the quantity in dry ice is not needed for shipping by ground.
4. As described in Step 6 above, send a copy of the shipment receipt to EH&S at ehs@nmsu.edu .

Contact EH&S for additional information at (575) 646-3327 or ehs@nmsu.edu

B. UPS Ground

1. Follow all packaging instructions listed on page 1 and 2 in Section A of Shipping Requirements.
2. Because Dry Ice shipments are not regulated for ground transport there are no requirements for Marking, Labeling and shipping papers. Prepare shipment as any other UPS package.
3. Send shipment confirmation via email to EH&S at ehs@nmsu.edu with the following details:
 - a. Ship to information
 - b. Shipper information including Department , name, phone and email
 - c. Date of shipment

ADDITIONAL RECOMMENDATIONS

1. Do not write “specimens” or “diagnostic specimens” on the box. Diagnostic specimens are subject to specific packaging requirements and there should not be any misunderstanding about the shipment. Diagnostic specimens, in shipping terminology, are materials that may be infectious to humans or animals. If there is concern that the samples might be infectious, please contact the Biosafety Manager at (575) 646-4463.
2. Reusing a dry ice shipping box is a good use of resources. If a box is reused, completely cover or obliterate all unnecessary marking such as hazard labels, addresses, old FedEx (or other courier) labels and/or barcodes. Only reuse a box if it can be verified it is not contaminated and the integrity is intact. A box should not be reused if it is torn, cut, stained, or if the insulation is cracked or broken.
3. Minimize the volume of air in the package in order to slow the rate of sublimation of the dry ice. If there is any air space after you fill your package with dry ice, fill it with packing peanuts or other material to reduce the volume of air space.
4. A general rule of thumb is that 5-10 pounds (2.27-4.54 kg) of dry ice are needed for every 24 hours of transportation time. Some types of packaging are more efficient insulators than others. Refer to the package manufacturer’s recommendations to determine the specific amount of dry ice needed. Make arrangements with the consignee to make sure the package will be received on its intended delivery date. Take into account local holidays or closings that might delay package receipt.