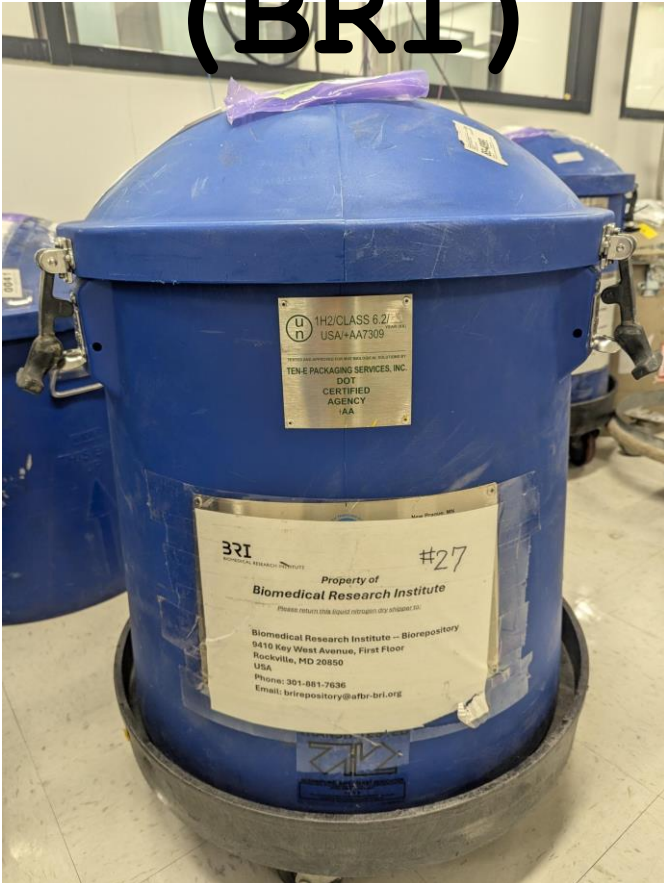


Biomedical Research Institute

BRI LN₂ Shipper
(BRI)



This part of the presentation covers:

- How to request an LN₂ shipper from BRI
- Review the steps, documentation, and requirements to ship specimens to BRI
- How to charge and pack an LN₂ shipment to BRI

- ☐ Viable cryopreserved PBMCs that have been stored in LN₂ or transferred to LN₂ storage at a CRS/Laboratory. They must be sent to BRI in an LN₂ shipper.

(This applies to all PBMCs greater than 5 weeks after collection)

- ☐ Both Domestic (US) and International (Non-US) CRSs/Laboratories can request a LN₂ shipper from BRI

LN₂ Shipper Request E-mails:

LN₂ shipper request e-mails need to be sent to BRI at least two weeks ahead of need for domestic sites (US) and as much advance notice as possible for international sites (Non-US).

The email should contain the following information:

❖ **Subject of Email:** Lab # __: BRI LN2 Shipper Request

(1) Requesting Lab Information:

Lab Name:

LDMS Lab Number:

(2) Requester Contact Information:

BRI will contact this person if there are any questions regarding the request

Name of Contact Person:

Contact Person E-mail:

Contact Person Phone:

| | | |
|----|-----------------------------------|-----|
| To | <u>brirepository@afbr-bri.org</u> | Bcc |
| Cc | | |

Add a subject **Lab # __: BRI LN2 Shipper Request**

(3) What material is being shipped:

Protocol/Study:

Number of Sample Boxes:

2-inch standard sample boxes



(4) Complete shipping Address:

Contact/Attention to:

Shipping Address:

(include the institution's name, as well as floor or room number if applicable)

E-mail:

Phone:

All LN₂ shippers should be returned as soon as possible in order for BRI to maintain an adequate inventory.

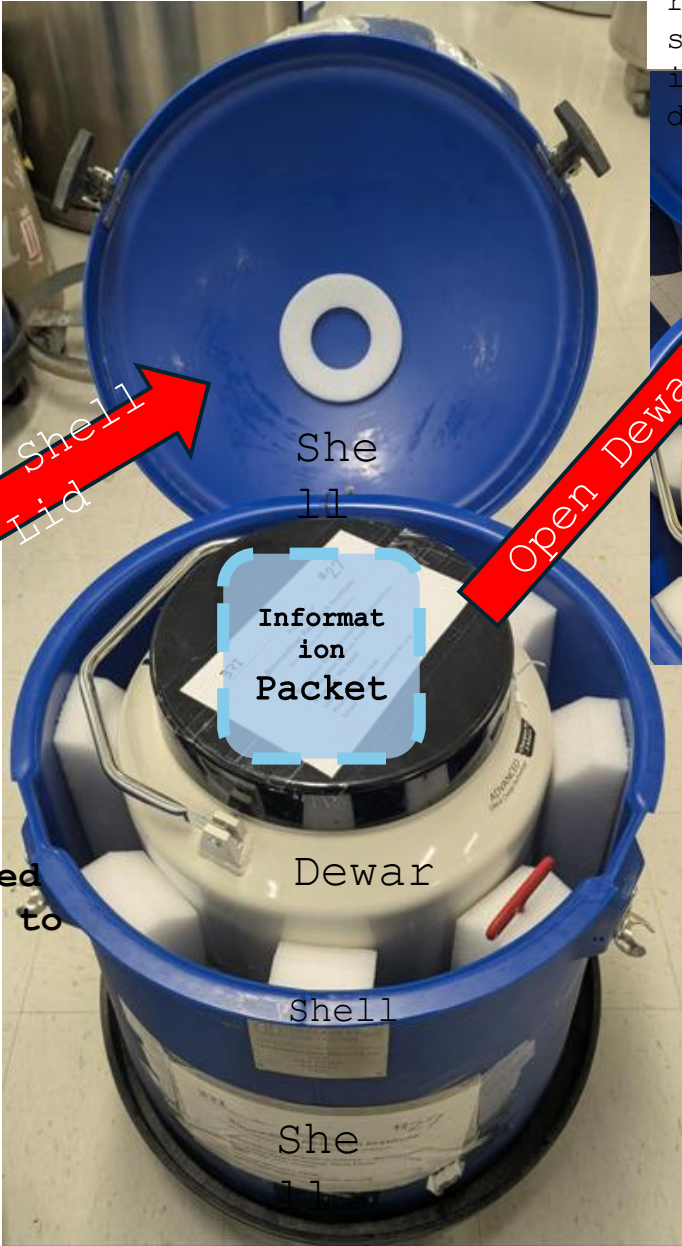
BRI LN₂ Shipper:
Empty shipper arrives at CRS/Laboratory

Be gentle when removing dewar lid so that the insulation does not detach.

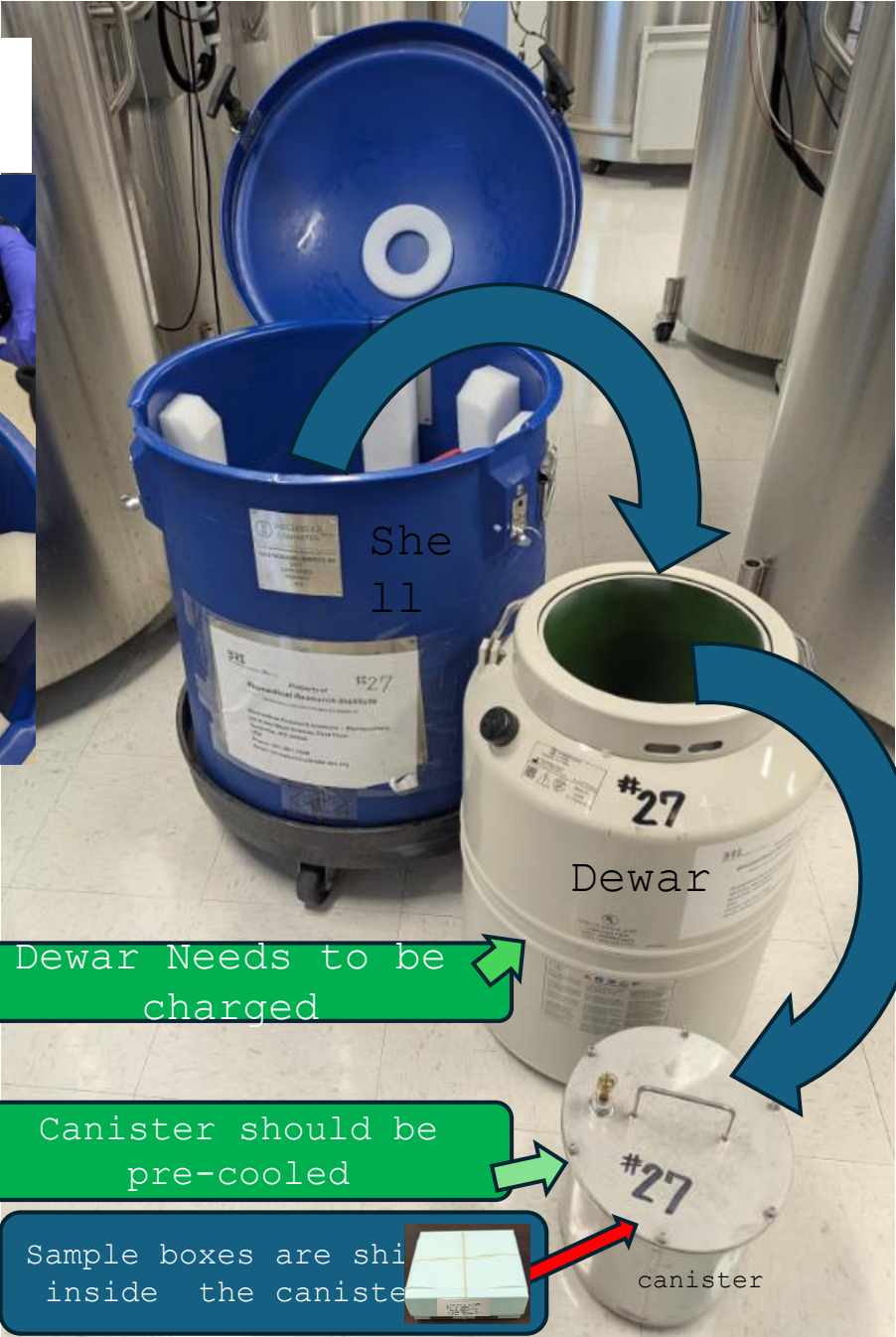
Labels upon arrival:



Open shell
Lid



Open Dewar Lid



All labels will be replaced for the outgoing shipment to BRI

Steps to Ship Samples to BRI: International sites (Non-US)

(1) Email BRI: Permission to Ship

mail

The Permission to Ship Email must include but not limited to the

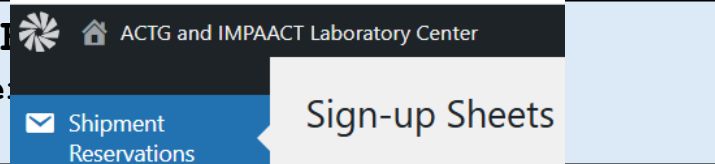
following information:
Timeframe or anticipated date of shipment: (would like to ship the week of _____, Would like to ship in the next two weeks)

- **Shipment Type:** (Dry ice shipment, LN₂ shipper, Ambient shipment)
- **Protocols/Study:**
- **Specimen Type(s):** (examples: Serum, Plasma, Urine, PBMCs, Whole Blood, PAX gene Tubes, Hair, Swabs)

****Need to wait for response from BRI to**

(2) Use Reservation Tool: Reserve slots (ACTG shipment to I

*Note: All shipping materials must be ready/LN₂ shippers must be on site be



(3) Email BRI: Shipment

Notification Email

The Shipment Notification Email must include following

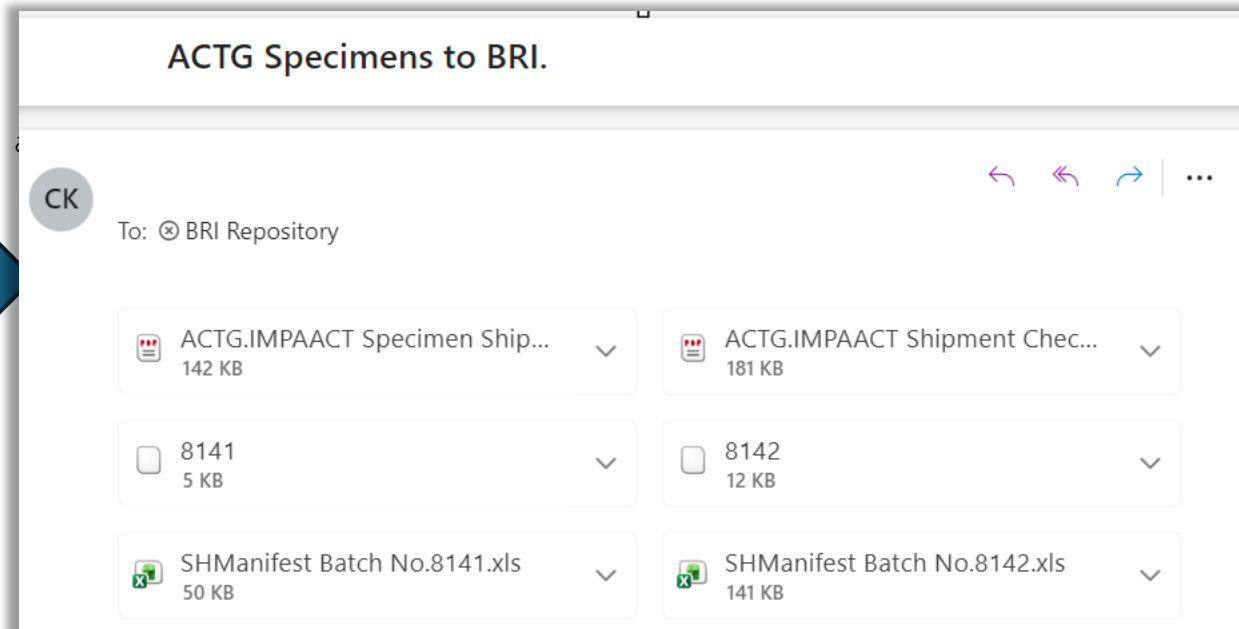
- **Shipment Notice Form**
- **International Checklist**
- **LDMS Batch file**
- **Manifest**

Note: Additional information is welcome on the e-mail

For example:
Tracking #, Protocols, Batch #, how many boxes are in each batch, what specimens

Reminder: **Paper copies** of the following need to be included with the shipper

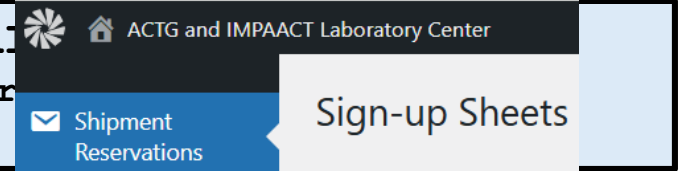
- **Shipment Notice Form**
- **International Checklist**
- **Manifest**
- **Box map(s)**



Steps to Ship Samples to BRI: Domestic sites (US):

(1) **Use Reservation Tool:** Reserve slots (ACTG shipment to BRI)

*Note: All shipping materials must be ready/LN₂ shippers must be on site before

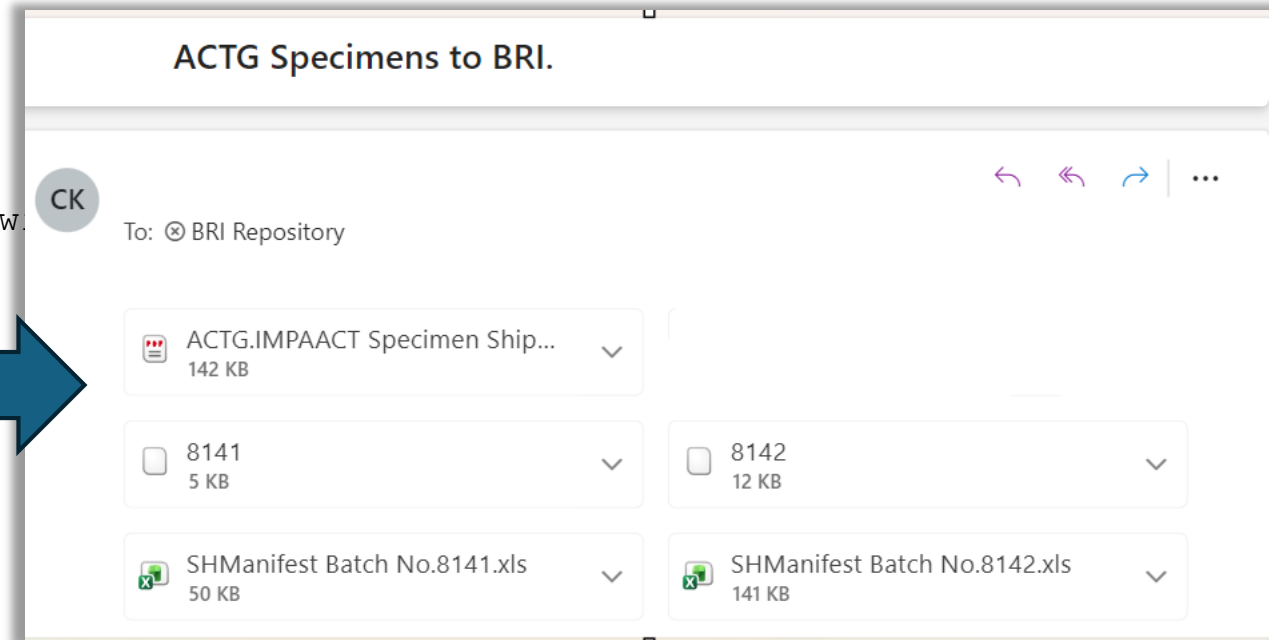


(2) **Email BRI: Shipment**

Notification Email

The Shipment Notification Email must include follow.

- **Shipment Notice Form**
- **LDMS Batch file**
- **Manifest**



Note: Additional information is welcome on the e-mail

For example:

Tracking #, Protocols, Batch #, how many boxes are in each batch, what specimens are being sent

Reminder: **Paper copies** of the following need to be included with the shipper

- **Shipment Notice Form**
- **Manifest**
- **Box map(s)**



ACTG/IMPAACT SPECIMEN SHIPMENT NOTICE FORM

ACTG/IMPAACT SPECIMEN SHIPMENT NOTICE

INSTRUCTIONS: Email a copy of the completed Shipment Notice to the recipient/consignee on the day of or prior to shipping specimens. In addition, when shipping to the biorepository, all requirements outlined in ACTG- SOP144 (<https://member.mis.s-3.net/cms/fpage/6172/1290>) or the IMPAACT Manual of Operations (<https://www.impactnetwork.org/resources/manual-procedures>) must be met.

NOTE: Prenotification of international shipments must be emailed and approved by the repository BEFORE the shipment is sent.

RECIPIENT INFORMATION:

| | | | |
|--------------------|----------------|----------------------------|----------------------------|
| Recipient's Name: | Alex Federline | Recipient's Email: | biorepository@afbr-bri.org |
| Recipient's Phone: | (301) 881-7636 | Recipient Lab number/Name: | 999/BRI |

SHIPMENT INFORMATION:

| | | | |
|--|---|---|---|
| Shipper's lab or site #: | Lab # /CRS# | Courier Airbill #: | XXXXXXXX (updated) |
| Shipper's Network Affiliation: | <input checked="" type="checkbox"/> ACTG <input type="checkbox"/> IMPAACT <input type="checkbox"/> OTHER: | LDMS Manifest Report: | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO* |
| Shipper's Name: | XXXX XXXX | Case Report Forms (CRF): | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Not Required |
| Shipper's Phone: | XX-XXXX-XXXX ext XXX | LDMS File Sent by Email: | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO* |
| Date of Shipment (DDMMYY): | 16Jan2026 | LDMS Shipment (Batch) Number(s) | 8141 8142 |
| Courier Service (e.g., FedEx, World Courier, etc.): | World Courier /Bocair /FedEx Priority Overnight | | |
| *Other Relevant Information (e.g., Partial box explanation, PBMC shipment, or explanation for missing paperwork, etc.) | | **# of sample boxes in each batch | |
| Description of shipping container(s) (color, size, manufacturer type) in case of loss by courier. | | 1X STP-320 shipper /air 1X World Courier Box (GD1 30) / air BRI 1X2 shipper | |

SPECIMEN INFORMATION:

| | | | | | | |
|---|--|-------|--------------|--|---------------|--|
| Type of Shipment (Circle/Check the appropriate type): | <input checked="" type="checkbox"/> Category B (Diagnostics) <input type="checkbox"/> Category A (Infectious) <input type="checkbox"/> Exempt Specimen(s) | | | | | |
| Shipping Condition (Circle/Check the appropriate condition): | <input type="checkbox"/> Dry Ice <input checked="" type="checkbox"/> Dry Shipper (LN ₂) <input type="checkbox"/> Ambient <input type="checkbox"/> Refrigerated/Gel Packs | | | | | |
| Number of Primary Containers (e.g., blood tubes (ambient) or cryovials (frozen)): | Total # samples (and ori) (40 SER, 5 DBS cards, 20 PAX, 50 PBMC) | | | | | |
| Specify Protocol # for batched shipments (e.g., Quest, Fisher, and BRI): | Protocol #1: | A53XX | Protocol #5: | | Protocol #9: | |
| | Protocol #2: | A54XX | Protocol #6: | | Protocol #10: | |
| | Protocol #3: | | Protocol #7: | | Protocol #11: | |
| | Protocol #4: | | Protocol #8: | | Protocol #12: | |

Copy of the Shipment Notice Form can



Find: ABOUT COORDINATION AREAS RESOURCES NEWS & EVENTS

ACTG/IMPAACT Laboratory Resources

Most recent version:

ACTG/IMPAACT Specimen Shipment Notice
Nov. 01, 2023

Section 1 Recipient Information

Section 2 Shipment Information

Section 3 Specimen Information

★ Other Relevant Information field -

Moving forward need to include the number of sample boxes in a batch

Please complete ALL sections

(DO not leave a field blank)

Remember to Review and Update the Form for each shipment

RECIPIENT INFORMATION:

| | | | |
|--------------------|----------------|----------------------------|----------------------------|
| Recipient's Name: | Alex Federline | Recipient's Email: | brirepository@afbr-bri.org |
| Recipient's Phone: | (301) 881-7636 | Recipient Lab number/Name: | 999/BRI |

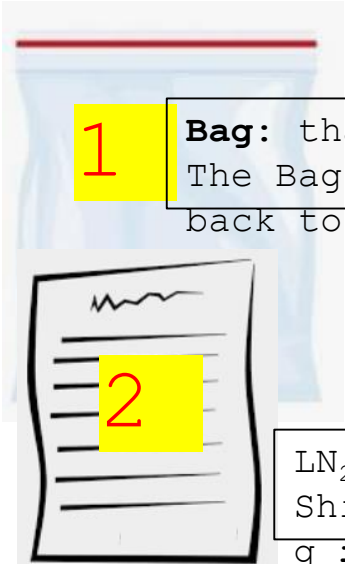
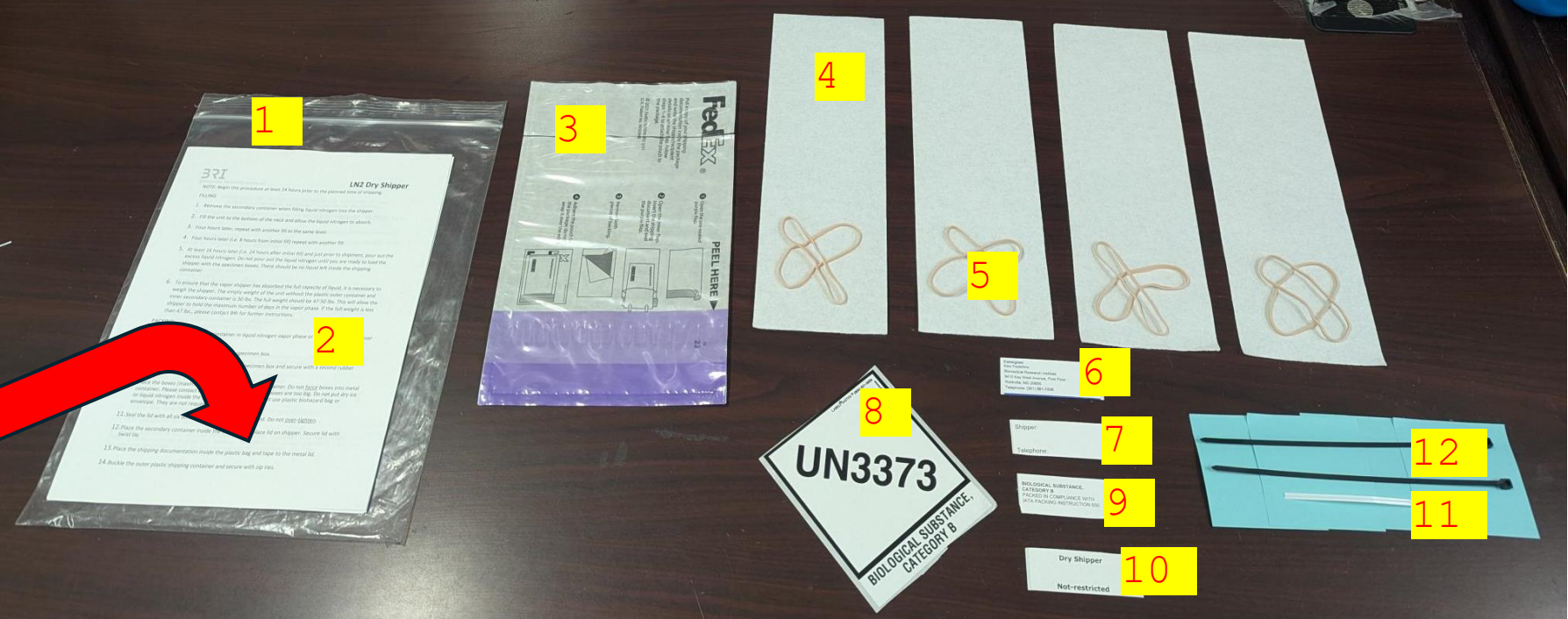
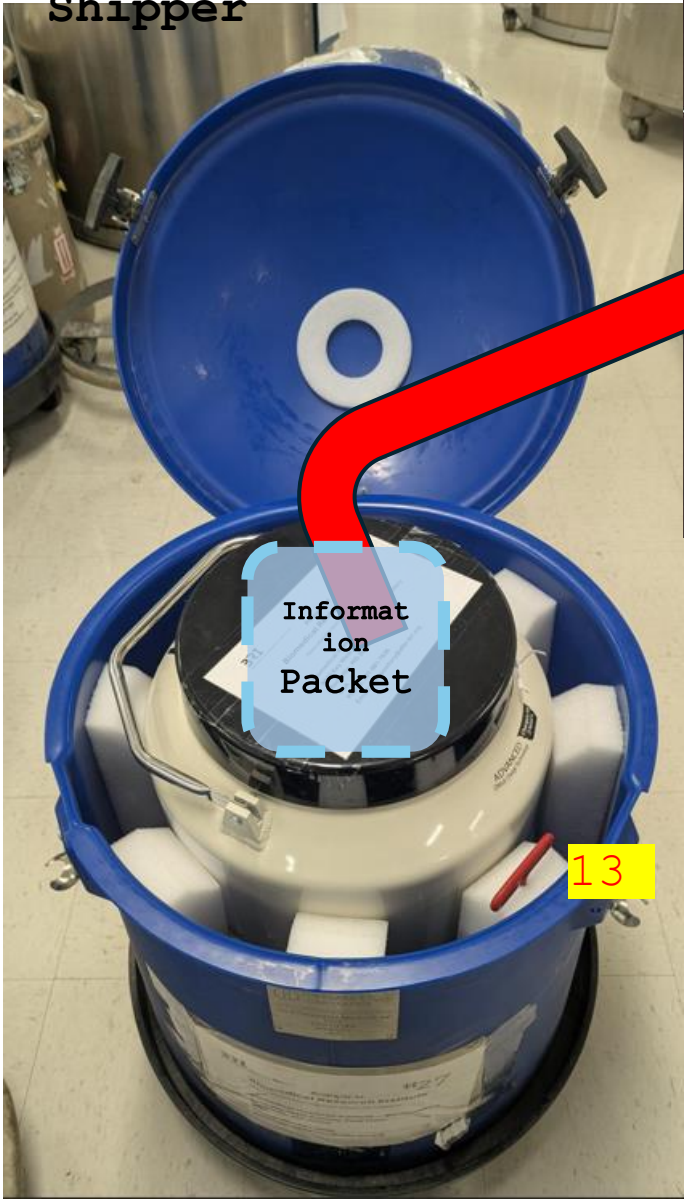
SHIPMENT INFORMATION:

| | | | |
|--|--|---|--|
| Shipper's lab or site #: | Lab # /CRS# | Courier Airbill #: | XXXXXXXXXX (updated) |
| Shipper's Network Affiliation: | <input checked="" type="checkbox"/> ACTG <input type="checkbox"/> IMPAACT <input type="checkbox"/> OTHER: | LDMS Manifest Report: | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO* |
| Shipper's Name: | XXXX XXXX | Case Report Forms (CRF): | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Not Required |
| Shipper's Phone: | XX-XXXX-XXXX ext XXX | LDMS File Sent by Email: | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO* |
| Date of Shipment (DDMmmYYYY): | 16Jan2026 | LDMS Shipment (Batch) Number(s) | 8141 |
| Courier Service (e.g., FedEx, World Courier, etc.): | World Courier /Biocair /FedEx Priority Overnight | | 8142 |
| *Other Relevant Information (e.g., Partial box explanation, PBMC shipment, or explanation for missing paperwork, etc.) | | **# of sample boxes in each batch | |
| Description of shipping container(s) (color, size, manufacturer type) in case of loss by courier. | | 1X STP-320 shipper /or/ 1X World Courier Box (GDI 30) / or/ BRI LN2 shipper | |

SPECIMEN INFORMATION:

| | | | | | | |
|---|---|-------|--------------|--|---------------|--|
| Type of Shipment (Circle/Check the appropriate type): | <input checked="" type="checkbox"/> Category B (Diagnostics) <input type="checkbox"/> Category A (Infectious) <input type="checkbox"/> Exempt Specimen(s) | | | | | |
| Shipping Condition (Circle/Check the appropriate condition): | <input type="checkbox"/> Dry Ice <input checked="" type="checkbox"/> Dry Shipper (LN ₂) <input type="checkbox"/> Ambient <input type="checkbox"/> Refrigerated/Gel Packs | | | | | |
| Number of Primary Containers (e.g., blood tubes (ambient) or cryovials (frozen)): | Total # samples /and or/ (40 SER, 5 DBS cards, 20 PAX, 50 PBMC) | | | | | |
| Specify Protocol # for batched shipments (e.g., Quest, Fisher, and BRI): | Protocol #1: | A53XX | Protocol #5: | | Protocol #9: | |
| | Protocol #2: | A54XX | Protocol #6: | | Protocol #10: | |
| | Protocol #3: | | Protocol #7: | | Protocol #11: | |
| | Protocol #4: | | Protocol #8: | | Protocol #12: | |

Information Packet
Sent in Empty LN₂
Shipper



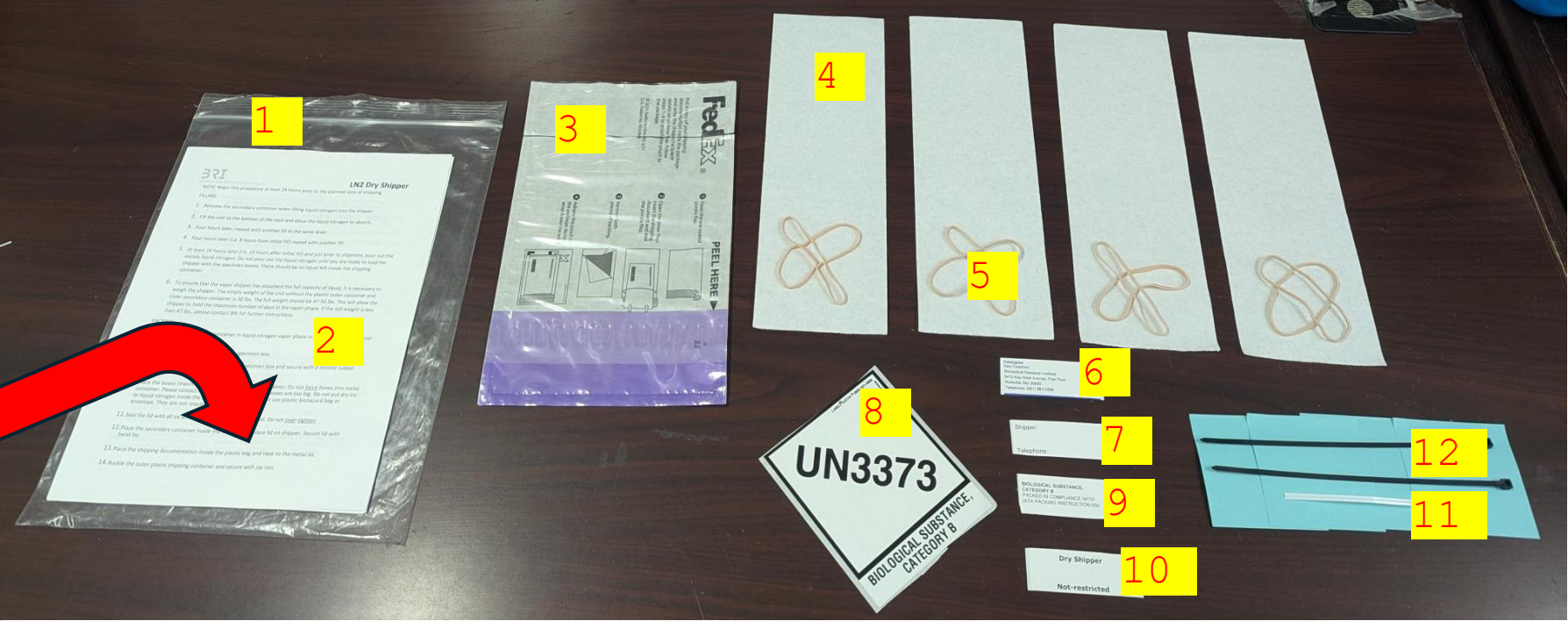
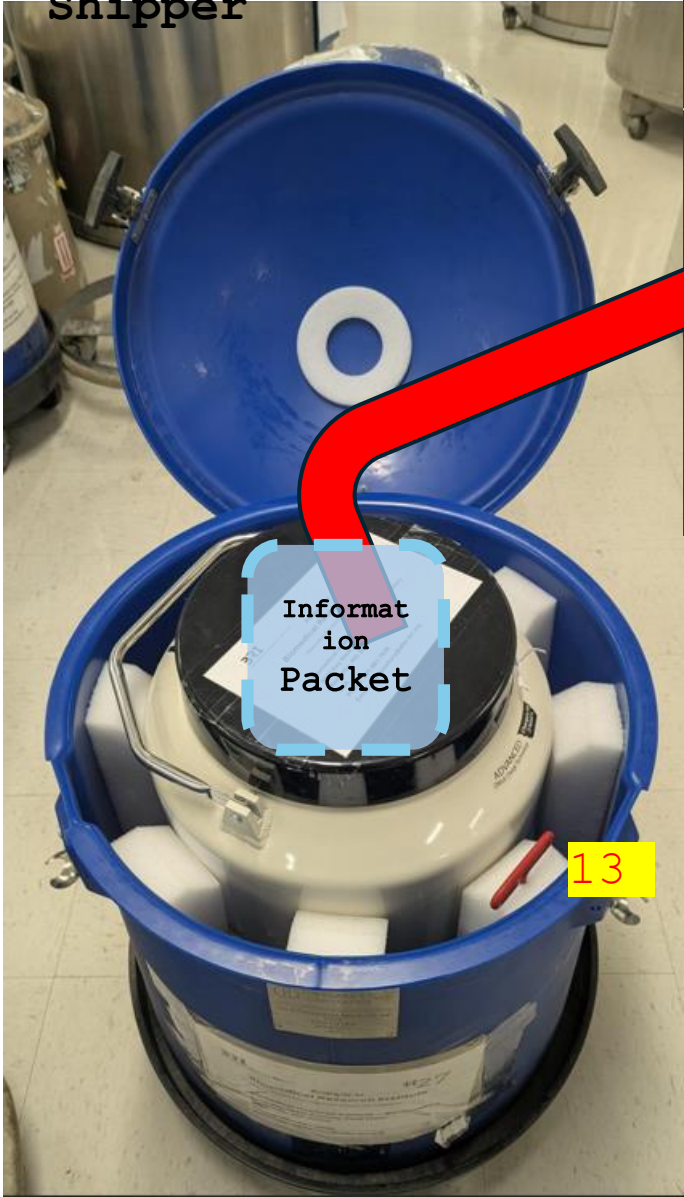
1 **Bag:** that holds the instructions.
The Bag can be reused to send paperwork/documentation
back to BRI

LN₂
Shipping/Chargin
g **instructions**



Envelope for **Waybill**
and other
documentation

Information Packet
Sent in Empty LN₂
Shipper



- ❖ 4 sample boxes can be shipped in one LN₂ shipper
- ❖ supplies to ship 4 sample boxes provided in the information packet



- 4 absorbent: 1 sheet per sample box
- 5 rubber bands: 2 bands per sample box

PBMC Sample Box Requirements:

Reminders:

- PBMC specimens must **not** be stored and shipped to BRI in the same box with other specimen types such as serum or plasma
- PMBC specimens from multiple ACTG protocols can be sent in the same box unless otherwise stated in the protocol specific LPC

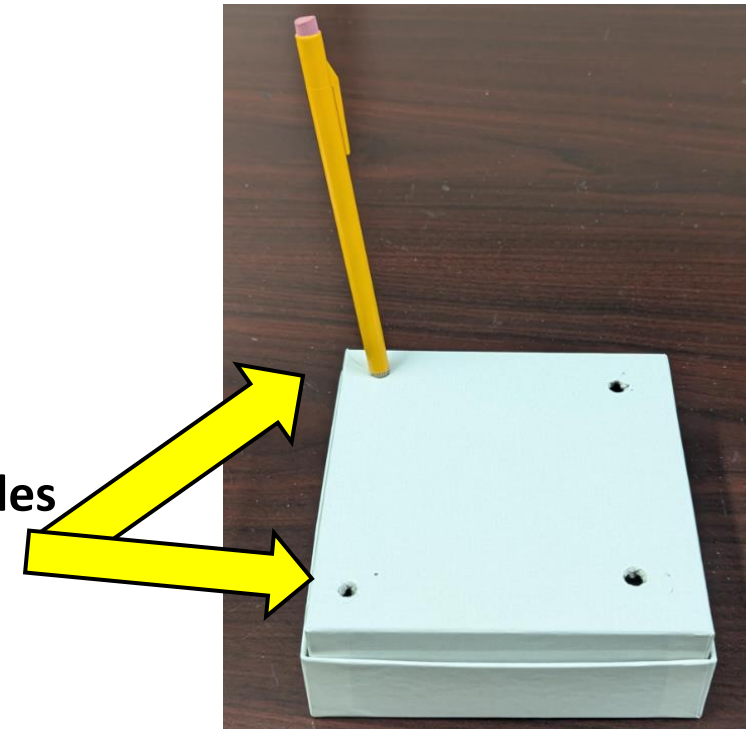


No Plastic Boxes

- **Boxes with vent holes must be used to ship PBMC samples to BRI**



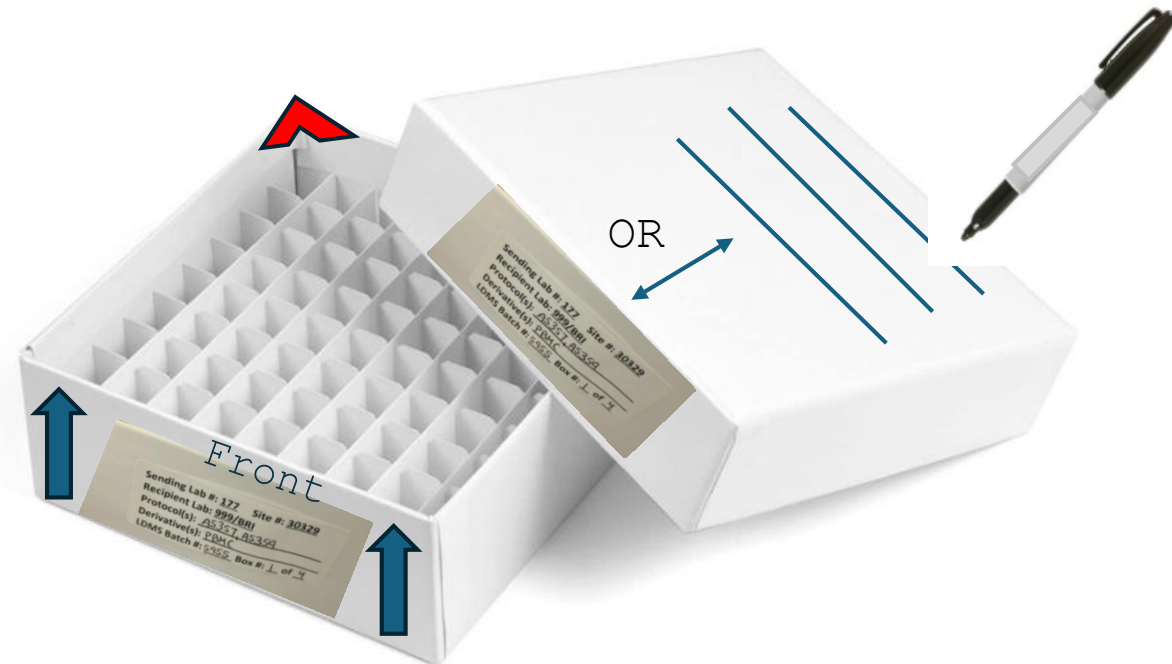
- **If CRSs/laboratories do not have boxes with premade vent holes**
A hole can be punctured in the bottom of the box in each of the 4 corners



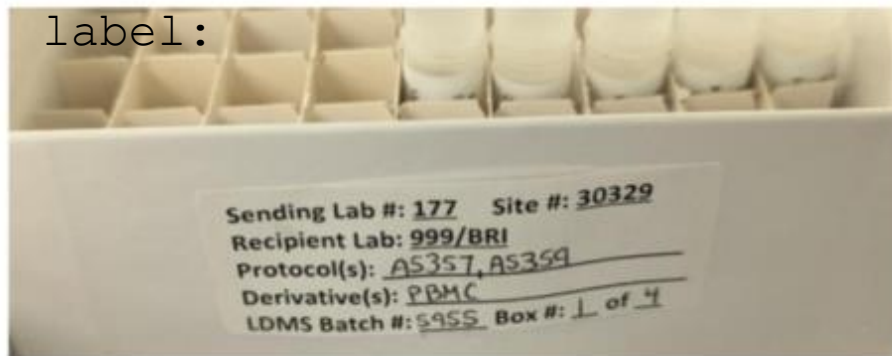
Sample Box Labeling Requirements:

Sample boxes must be labeled with the following information on the **top** and **bottom** of the box:

- Sending lab Name and LDMS number
- Receiving lab (To: BRI/ Lab 999)
- LDMS Batch file #
- Box number when more than one box is in a batch
- Include a **mark** at A1 or (1,1) for box orientation



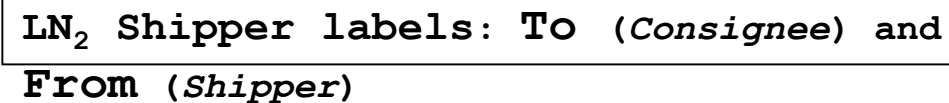
Example of PBMC sample box label:



Shipper

Information Packet

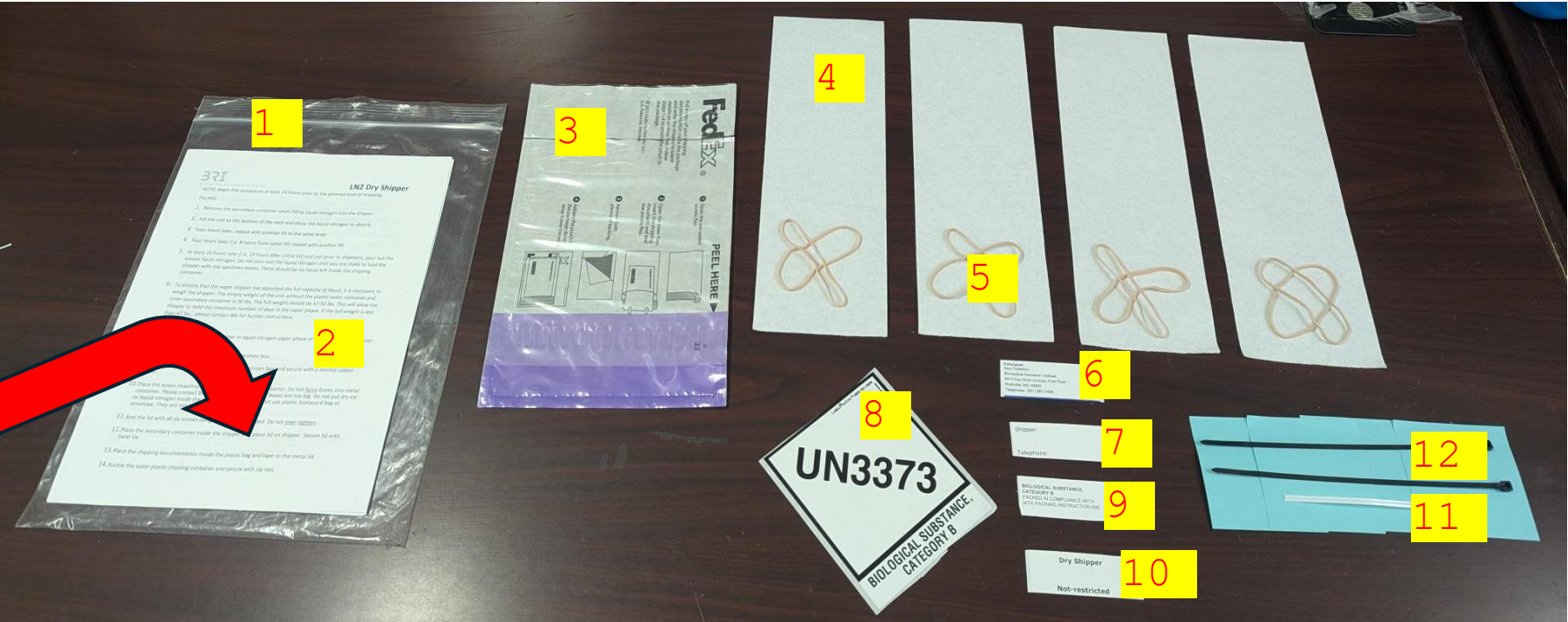
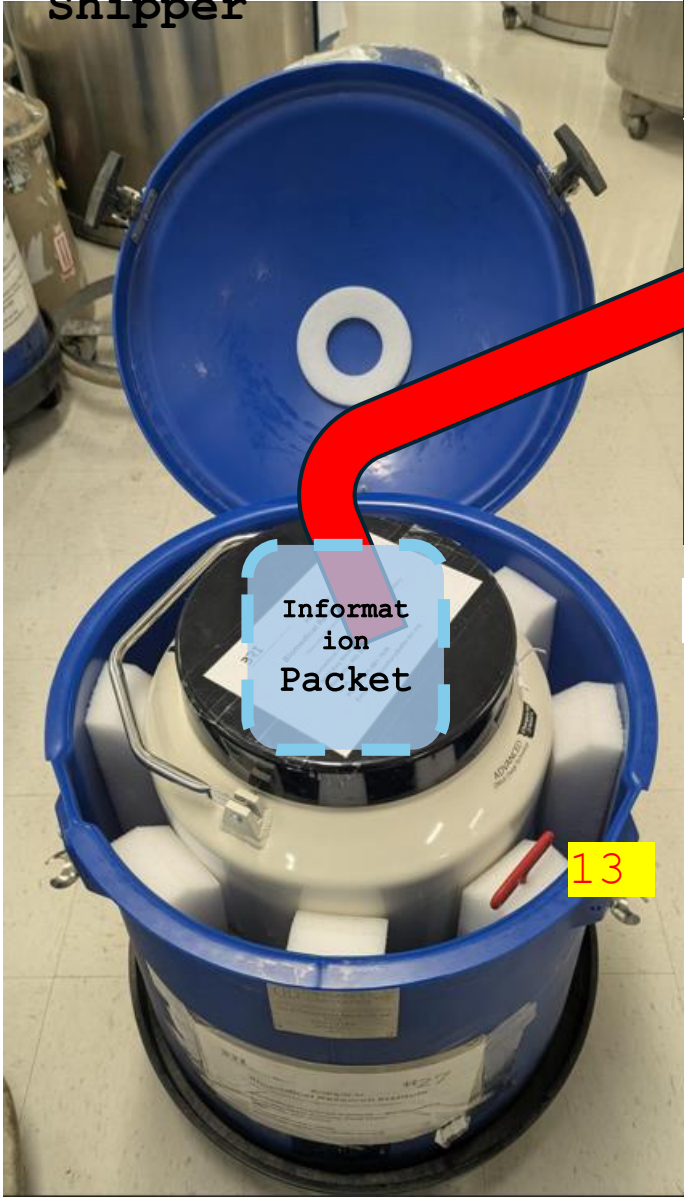
13



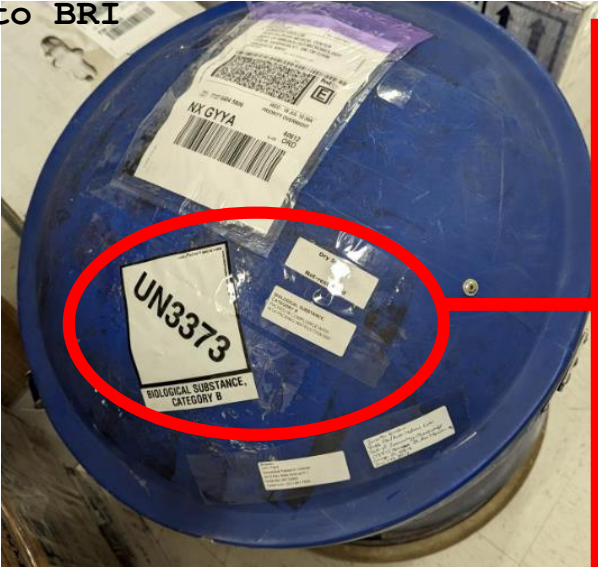
Shipper:

Telephone:

Information Packet
Sent in Empty LN₂
Shipper



Labels for outgoing shipment
to BRI



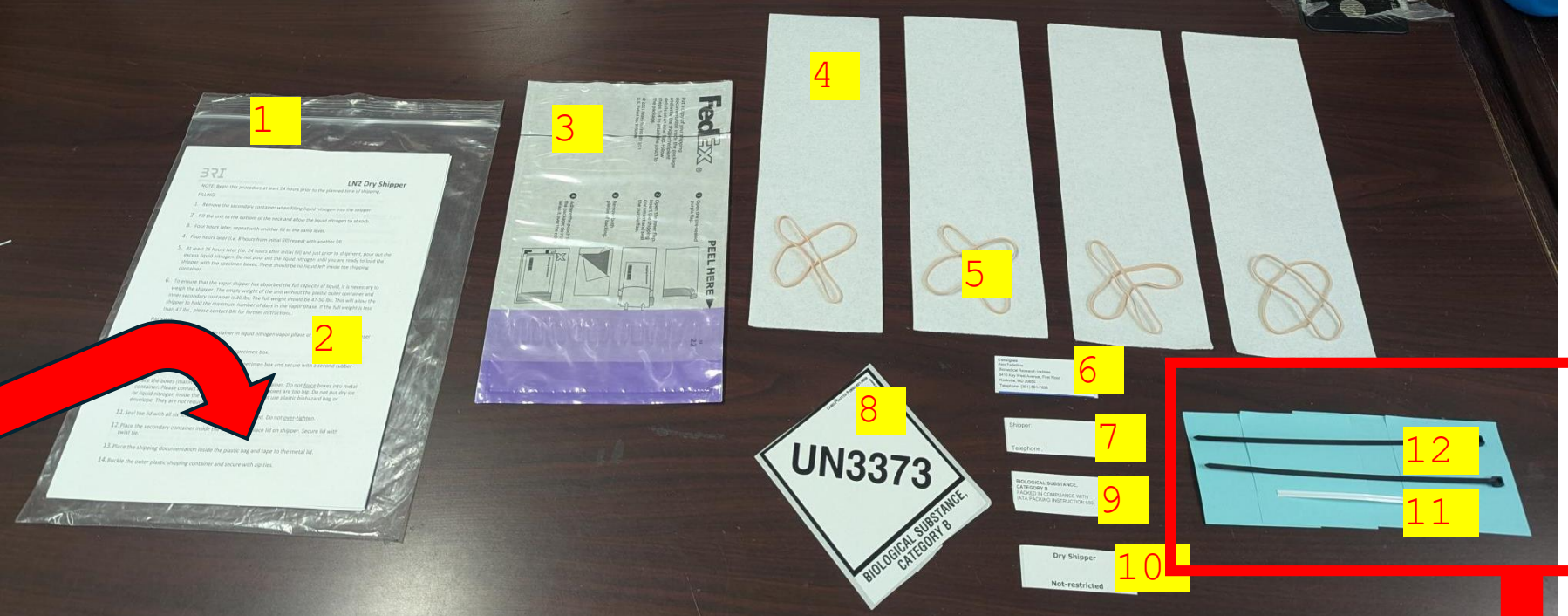
LN₂ Shipper labels: What is being
shipped



BIOLOGICAL SUBSTANCE,
CATEGORY B
PACKED IN COMPLIANCE WITH
IATA PACKING INSTRUCTION 650

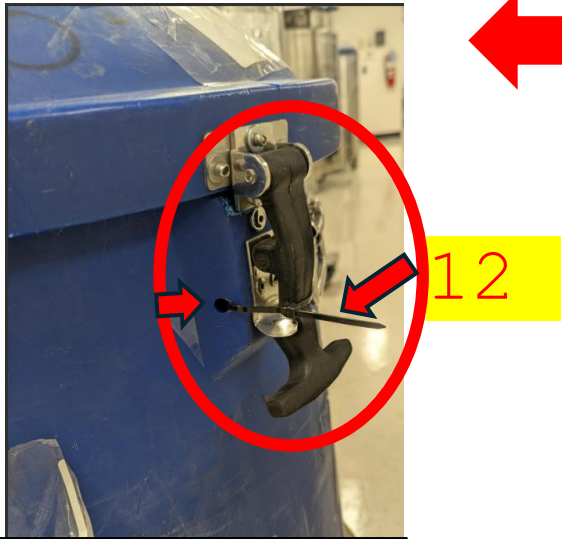
Dry Shipper
Not-restricted

Information Packet
Sent in Empty LN₂
Shipper



Twist tie

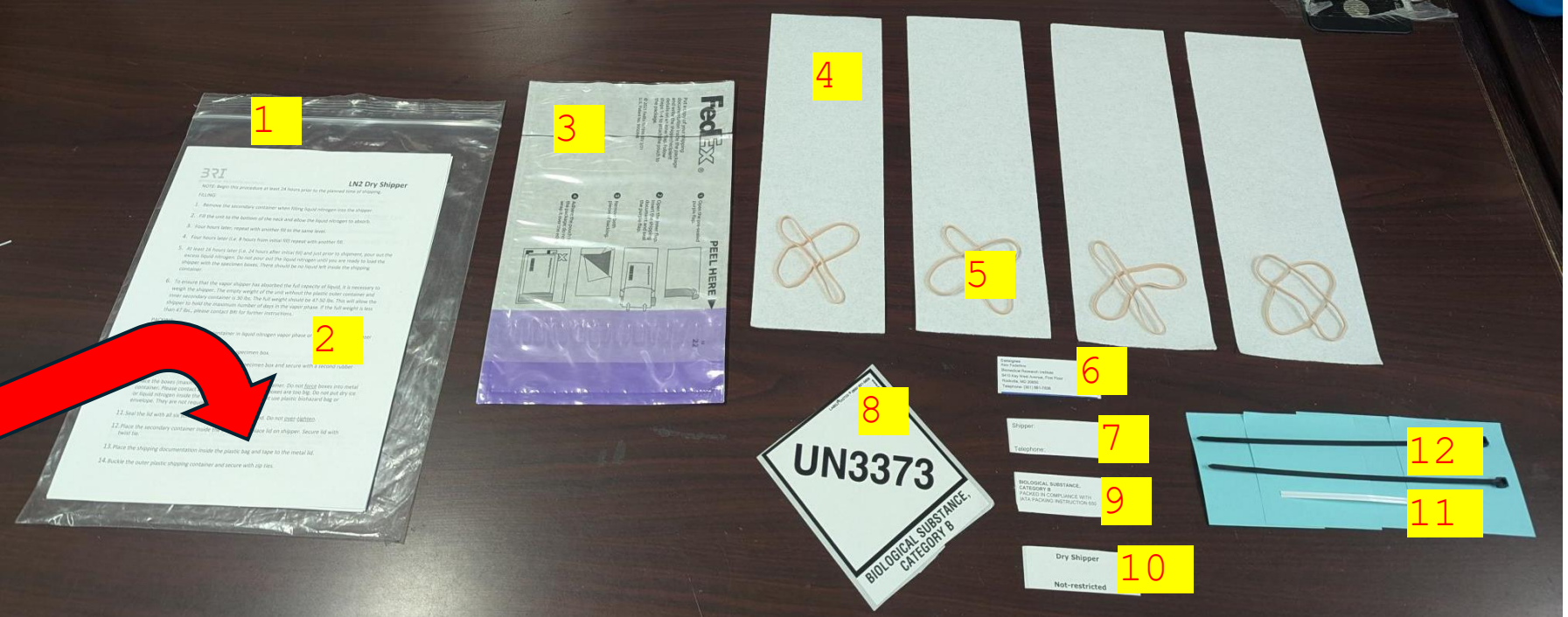
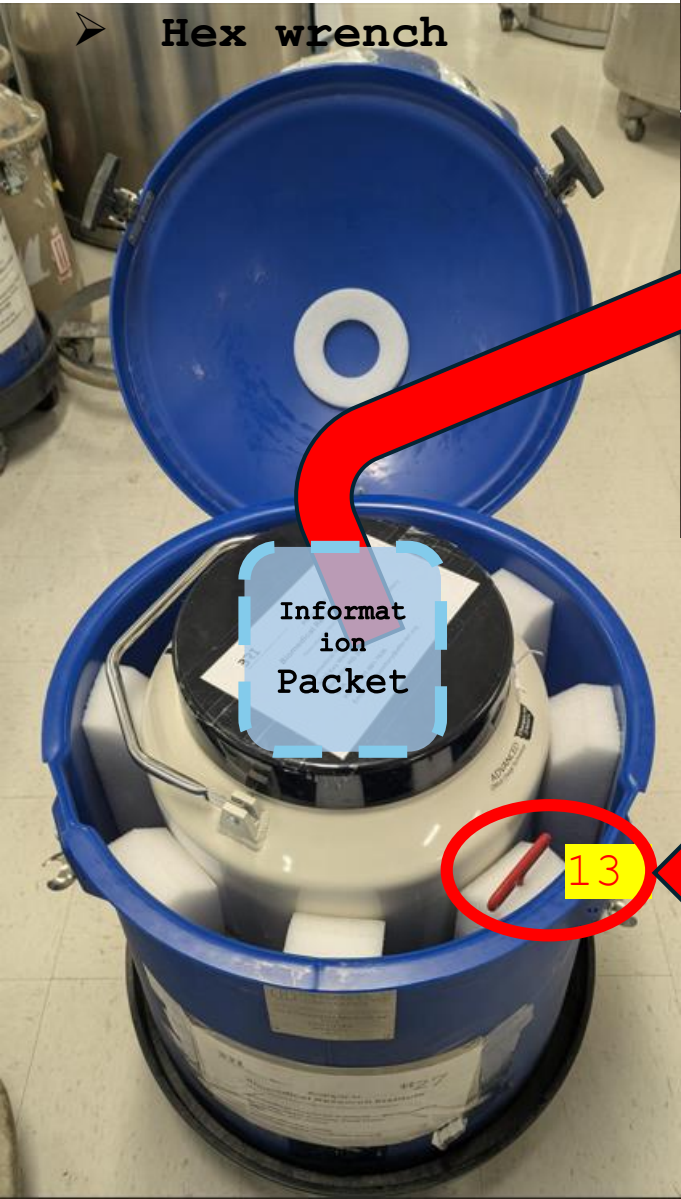
Secures the



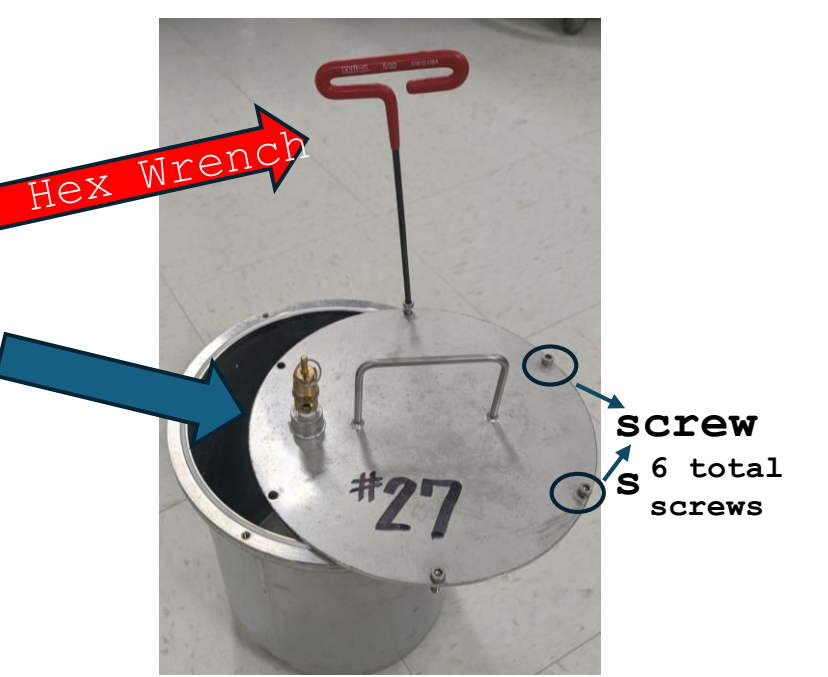
Zip ties

One zip tie per

Tool sent in Empty LN₂ Shipper



Hex Wrench: Used to loosen screws (open canister lid) and tighten screws (close canister lid). Sample boxes are shipped inside the canister.



Reminders:

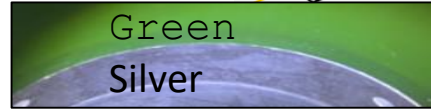
LN₂ Dewar Charging Instructions:

- Preparing and packing an LN₂ Shipper is a **2 Day** process
- Charging of the dewar needs to begin at least 24hrs prior to shipment pick-up by the courier

Day 1:



**Initial
Fill**



- Fill Dewar with Liquid
- Fill up to color change line (Silver to Green)
- Allow Liquid Nitrogen to be absorbed into the walls of the dewar



4hr after initial fill

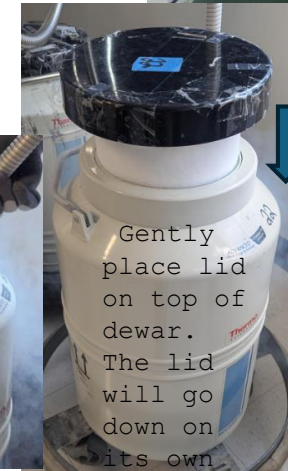
- Add more Liquid Nitrogen into the dewar (level will have decreased from initial fill)
- Fill up to color change line (Silver to Green)
- Allow Liquid Nitrogen to be absorbed into the walls of the dewar



4 hours later (8hr after initial fill)

- Add/Top off the Liquid Nitrogen in the dewar (IF NEEDED)
- Liquid Nitrogen should be visible at the color change (Silver to Green)
- Allow Liquid Nitrogen to be absorbed into the walls of the dewar

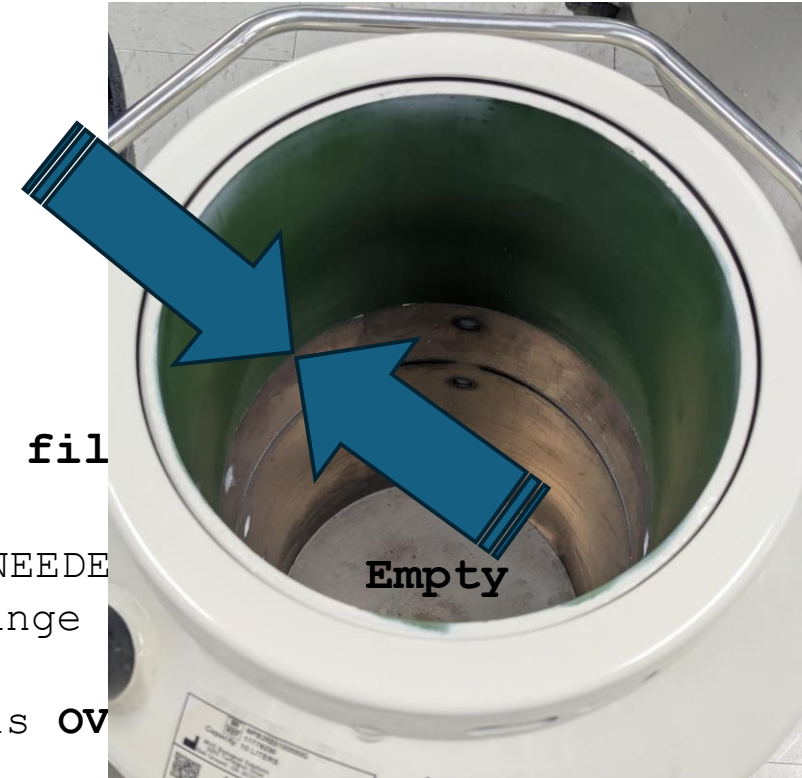
NIGHT



Gently place lid on top of dewar. The lid will go down on its own.



**Filled with
LN₂**



Empty

Canister should be pre-cooled preferably in LN₂ freezer if



LN₂ Dewer Charging Instructions:

Day 2:



At least 24 hours after
~~initial fill~~
*Do not perform step until ready to pack
the shipment

Pour out Liquid Nitrogen (hold dewar tilted/upside down for at least 30 sec) To remove excess liquid Nitrogen hold dewar tilted/upside again for 30 sec.

Weigh the dewar. A charged shipper should be **greater or equal to 47 lbs or 21.3kg**. (An empty dewar weights 30 lbs or 13.6kg)

A properly charged LN₂ will hold temperature for 14 days

Shipment
Packing

Time

Prepare and pack sample boxes



Canister
should be
pre-cooled



(≥47 lbs
/21.3kg)

Shipment
Packing

Pack the shipper

Time



Paperwork/Documentation

Labels for outgoing shipment to BRT

