

Core Handling & Preservation

Freezing Core with Dry Ice

- Second fastest way to freeze core and preserve fluid saturations
- “Best” for most applications
- Longer freeze time results in little alteration of core physical properties
- Used when fluid saturations and physical properties are of equal importance
 - Preserves volatile and semivolatile hydrocarbons
 - Keeps fluids from migrating in high-permeance materials

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Freezing Core with Dry Ice

1. Dry Ice is available at most industrial gas supply companies (some supermarkets).
2. Large marine ice chests are used to freeze and transport core.
 - a. Up to 72 quart coolers used for smaller core.
 - b. Large marine coolers (94 quarts and greater) used for core over two feet long.
3. Place approximately 50 to 75 pounds of dry ice in the bottom of the ice chest.
4. Label core, attach end caps, and place core in ice chest.
 - a. Close lid and core will freeze solid in 30 minutes.
 - b. Each ice chest freezes up to 22.5 feet of core using 50-75 pounds of dry ice.
5. Caution - Do not put dry ice in an unventilated or enclosed space due to risk of death by asphyxiation!

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- Place 50 to 75 pounds of dry ice in the bottom of the ice chest.
- Put core in ice chest and close lid. Core will freeze solid within 30 minutes.
- Continue adding core and dry ice as necessary.



Core Handling & Preservation

Transporting Frozen Core

1. Caution - Do not transport dry ice in passenger compartments due to risk of death by asphyxiation!
2. Large ice chests are used for transporting frozen core.
3. Place a layer of foam, bubble wrap, or “Styrofoam peanuts” in the bottom of ice chest to absorb shock during transport.
4. Place one layer of core on top of packing material.
5. Place a layer of dry ice over the core.
 - a. Dry ice pellets can be used as a “packing material” to secure the core and fill any voids between cores.
 - b. Block dry ice can also be used by breaking into smaller pieces and packing around core.
 - c. Bubble wrap or styrofoam peanuts can be added to the core layers to cushion the core during transport.

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Transporting Frozen Core

6. Continue alternating layers of core, packing materials and dry ice. Do not exceed three layers of core.
7. Fill remaining space with dry ice.
8. Put Chain of Custody in a zip lock bag and tape inside lid.
9. Close lid and seal with tape to keep cold.
10. Attach Dry Ice Placards to ice chest.
11. Contact Overnight Courier for shipment to laboratory for next day delivery. Notify laboratory of shipment arrival time (tracking numbers).
12. Arrange shipment so core does not sit in hot warehouse or truck for days.

Core Handling & Preservation

Transporting Frozen Core

- Ice chest filled
- with cores, dry
- ice, and packing
- material for
- cushioning.



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Transporting Frozen Core

Dry Ice Placard:
Overnight couriers
can supply the
placard stickers.

Shipper's Declaration not Required.

Part B is required

Dry Ice amount must be in kilograms.

Note: 2 lbs. = 1 kg.

Airwaybills/airbills must have the following:

1. "Dangerous Goods - Shipper's Declaration not required".
2. Dry Ice; 9; UN 1845;
3. _____ X _____ Kg 904 III
(Number (wt) pkgs)

Dry Ice
_____ kg.

UN 1845

9

Shipper's name and Address

Consignee Name and Address

Logos # 106426

Core Handling & Preservation

FedEx USA Airbill FedEx Tracking Number 8369 5105 3013

Form 101 No. 0215 Sender's Copy

1 From Please print and print hard
Date _____ Sender's FedEx Account Number 1669-5829-6
Sender's Name _____ Phone (562) 907-3607
Company P T S LABORATORIES
Address 8100 SECURA WAY
City SANTA FE SPRINGS State CA ZIP 9070-2116

2 Your Internal Billing Reference
First 24 characters will appear on invoice

3 To
Recipient's Name _____ Phone () _____
Company _____
Address _____ We cannot deliver to P.O. boxes or P.O. ZIP codes.
Address _____
City _____ State _____ ZIP _____

4a Express Package Service Packages up to 150 lbs.
☐ FedEx Priority Overnight Next business morning
☐ FedEx Standard Overnight Next business afternoon
☐ FedEx First Overnight Earliest next business morning delivery to select locations
☐ FedEx 2Day Second business day
☐ FedEx Express Saver Third business day
FedEx Envelopes rates not available. Minimum charge: One pound rate.

4b Express Freight Service Packages over 150 lbs.
☐ FedEx 1Day Freight* Next business day
☐ FedEx 2Day Freight Second business day
☐ FedEx 3Day Freight Third business day
*Call for Confirmation

5 Packaging *Declared value limit \$500
☐ FedEx Envelope* ☐ FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Specialty Pak ☐ Other

6 Special Handling Include FedEx address in Section 3.
☐ SATURDAY Delivery ☐ HOLD Weekday at FedEx Location ☐ HOLD Saturday at FedEx Location
FedEx Priority Overnight and FedEx 2Day to select locations. NOT Available for FedEx First Overnight. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
Does this shipment contain dangerous goods?
☐ No ☐ Yes As per attached Shipper's Declaration ☒ Yes Shipper's Declaration not required
Dry Ice 1 50
Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging. ☐ Cargo Aircraft Only

7 Payment Enter FedEx Acct. No. or Credit Card No. below.
☐ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No. Credit Card No. _____
Total Packages _____ Total Weight _____ Total Declared Value* \$.00
Your liability is limited to \$100 unless you declare a higher value. See back for details. FedEx Use Only

8 Release Signature Sign to authorize delivery without obtaining signature.
By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims. 447

Try online shipping at fedex.com
By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.
Questions? Visit our Web site at fedex.com or call 1.800.Go.FedEx® 800.463.3339.

0231229100

- Paper Shipping Label: FedEx is the easiest to ship with, they routinely handle dry ice shipments.



Core Handling & Preservation

FedEx Ship Track/History Address Book Preferences Fast Ship Reports My Profile

<< Log out Home Ship

Special services

- ☐ Saturday pickup
- ☐ Saturday delivery
- ☐ COD (Collect on Delivery)
- ☐ Hold at FedEx location
- ☒ Dry Ice
- ☐ Dangerous Goods

FedEx Express reference information

Your reference

P.O. number

Invoice number

Department number

FedEx InSightSM (a shipment visibility application) [Learn more.](#)

- ☐ Block shipment data (will prohibit the recipient and third party payer from viewing information about this shipment) [Edit](#)
- ☐ Shipment content (shipment level detail for InSight customers only) [Edit](#)

FedEx ® Delivery Signature Options

Signature type Select signature type

Shipping Options

Pickup/Drop-off

- ☒ Will use scheduled pickup at my location
- ☐ Will drop off at FedEx location [Find location](#)
- ☐ Will contact FedEx to request pickup [Schedule pickup](#)

[Clear fields](#) [Get courtesy rate](#) [Back](#)

Please Note

- Click the Continue button only once. Expect some delay due to transmission time. Do not click Stop or Reload; it may cause a duplicate shipment transaction.
- By clicking the Continue button, you agree to the FedEx Ship Manager at [fedex.com](#) Terms of Use and the FedEx terms of shipping in the applicable FedEx Service Guide Shipper's Terms and Conditions for FedEx Express international shipments.

- Electronic Shipping: FedEx is the easiest to ship with,
- they routinely handle dry ice shipments.

