



SARS-CoV-2 Specimens: Packing and Shipping

Personnel must be trained to pack and ship suspected or confirmed SARS-CoV-2 specimens according to the regulations and in a manner that corresponds to their function-specific responsibilities. This job aid is not a substitute for the required training to pack and ship infectious substances, but instead serves as a quick reference guide adapted from the CDC Laboratory Training course

[Packing and Shipping Dangerous Goods: What the Laboratory Staff Must Know.](#)



cdc.gov/coronavirus

Packing and Shipping Process

Job Aid Overview

This job aid describes a practical four-step method to packing and shipping suspected or confirmed SARS-CoV-2 specimens as UN 3373 Biological Substance, Category B. This process is designed to systematically think through the requirements needed for transportation and provide quick-reference job aids to apply in the workplace.

- Step 1: Determine the mode of transport for the package
- Step 2: Determine the classification of a substance
- Step 3: Pack the Material
- Step 4: Label, mark, and document the package

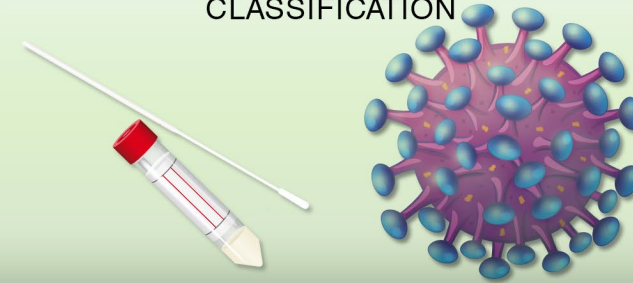
Step 1

DETERMINE THE MODE OF TRANSPORT



Step 2

CLASSIFICATION



Step 3

PACK YOUR MATERIAL



Step 4

LABEL, MARK, AND DOCUMENT THE PACKAGE



Scenario

This scenario will be referenced throughout the job aid to walk through the four-step method of packing and shipping suspected or confirmed SARS-CoV-2 specimens.

“A 65-year-old patient requests a COVID-19 test from their physician. The patient is experiencing chills, body aches, and cough, and had a close encounter in the last three days with a friend who was recently diagnosed with SARS-CoV-2. The physician's office collects a nasopharyngeal (NP) swab and contacts the state public health laboratory who requests that all specimens be sent to the designated laboratory for testing within 24 hours or overnight. The physician's team contacts an air transport company to ship the specimen via priority air overnight to the designated laboratory at the requested frozen temperature (<0°C).”*



Scenario

Step 1: Determine the Mode of Transport

Step 1 is to determine the mode of transportation and associated regulations. The state public health laboratory requested that all specimens be sent to a designated laboratory for testing. The physician's team contacts an air transport company to ship the specimen(s) priority air overnight to the designated laboratory. The person shipping the specimen should reference the [IATA Dangerous Goods Regulations](#) as the mode of transportation will be **AIR**.

Step
1



Scenario

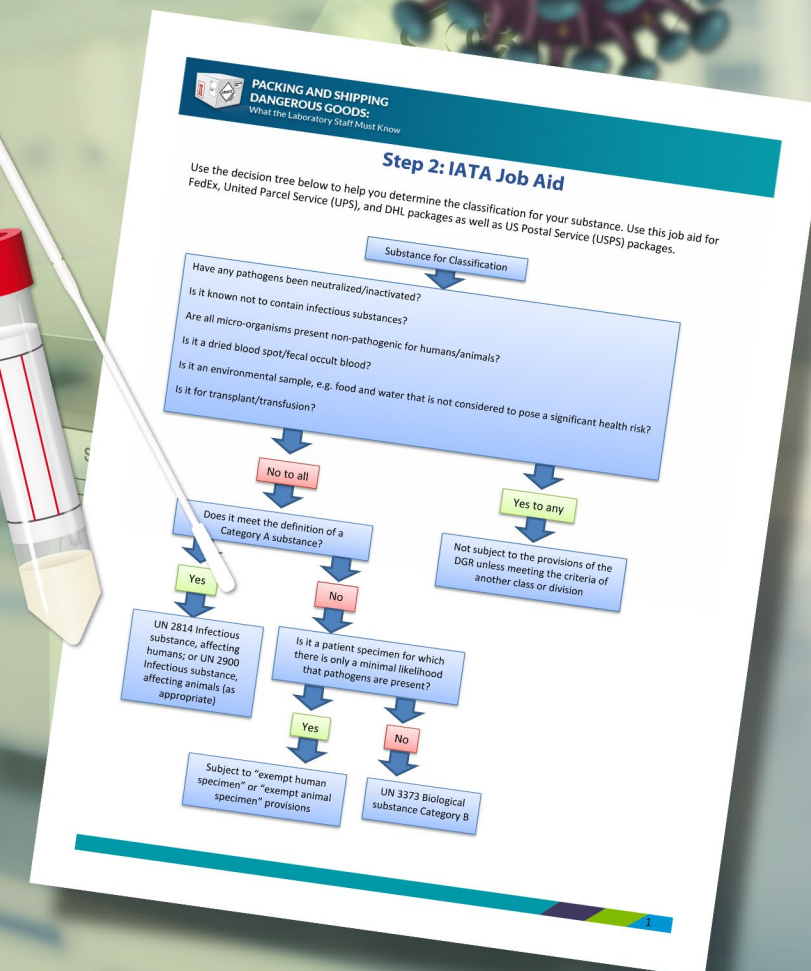
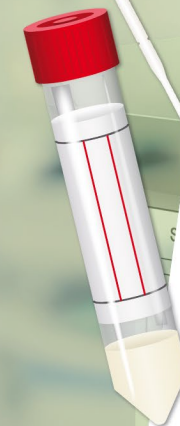
Step 2: Determine the Classification

For this scenario, suspected or confirmed SARS-CoV-2 specimens should be packed and shipped as UN 3373 Biological Substance, Category B*, in accordance with the current edition of the [International Air Transport Association \(IATA\) Dangerous Goods Regulations](#) and [U.S. Department of Transportation \(DOT\) Transporting Infectious Substances Safely](#).



UN 3373 Biological substance,
Category B

Step 2



Scenario

Step 3: Pack the Material

According to the packing instructions (PI) regulations, the shipper is responsible for all aspects of packing the dangerous goods. All suspected or confirmed SARS-CoV-2 specimens must be triple-packed with primary, secondary, and outer packaging. For this scenario, the shipper would:

- Place the specimen into a leak-proof, sift-proof glass, metal, or plastic primary receptacle.
- Cushion each primary receptacle with absorbent materials and place it into a leak-proof, sift-proof 95 kPa bag or tube that can absorb the entire volume of the substance.
- Surface decontaminate the secondary packaging and move it to a “clean” zone.
- Secure the secondary packaging in rigid outer packaging, then add dry ice or gel packs.
- If dry ice is used, the outer packaging must be designed and constructed to permit the release of carbon dioxide gas to prevent the build-up of pressure.

Step 3



Step 4

Scenario

Step 4: Mark, Label & Document the Package

The following markings and labels should be used when shipping the suspected or confirmed SARS-CoV-2 specimen by Air:

- **Package Orientation Labels**
The arrows help personnel know which way is up when handling your package. Place the arrows on TWO opposing sides of the package in the same orientation as the primary packaging.
- **Shipper and Consignee Information**
The shipper and consignee's name and address must appear on all dangerous goods packages.
- **UN 3373 Mark**
UN3373 is a diamond-shaped mark used when shipping Category B substances. It must be displayed on the outer package near the proper shipping name.
- **Proper Shipping Name**
The proper shipping name is the specific name from the list of dangerous goods used to describe the hazard properties and the composition of dangerous goods.
- **Class 9 Label, Proper Shipping Name, UN 1845 Mark and Net Weight of Dry Ice in Kg.**
Packages including dry ice must include additional pieces of information. Generally, this is a single label but can also be found as two individual labels.
- **Responsible Person Contact Information**
A responsible person's name and telephone number are required for shipment of all dangerous goods. The responsible person must be aware of the package contents.



Scenario

Step 4: Mark, Label & Document the Package (Cont'd)

For this scenario, the following documentation should be used when shipping the suspected SARS-CoV-2 patient specimen by Air:

Itemized List of Contents

An itemized list of contents includes the contents of the primary packaging. This must be enclosed between the secondary and outer packaging.

Air Waybill

The Air Waybill is a critical document that constitutes the contract between the shipper and the carrier airline. It is required for all shipments of dangerous goods by air. The Air Waybill must be attached to the outer packaging.

Clinical Microbiology/Virology Request Form

Patient Information (Please Print)

Name _____ DOB ____/____/____ Age ____ ☐ M ☐ F
Pt Address _____ City _____ State _____ Zip Code _____
City/County of Residence _____
Medical Record/Chart/Accession# _____ Patient ID _____
Marital Status: ☐ single ☐ married ☐ separated ☐ divorced ☐ widowed ☐ unknown
Race: ☐ Black ☐ White ☐ Asian ☐ AI/AN ☐ NH/PI ☐ Other _____ Ethnicity: ☐ Hispanic/Latino ☐ Not -Hispanic/Latino
(check all that apply)

Submitter Information

Submitter Code # _____ Site code _____ FIPS code _____
Send Report to: _____
Submitter _____ Submitter Phone # _____ - _____ - _____
(Name of Health Dept, Hospital &/or private Clinician)
Submitter Address _____ City _____ State _____ Zip code _____
Attending Clinician _____
Attending Clinician Phone # _____ - _____ - _____
District or PH Contact _____
District or PH Contact Phone # _____ - _____ - _____

Site Type
☐ STD ☐ ATS ☐ DCJ ☐ FP ☐ GYN ☐ Priv Phys
☐ OB/prenatal care ☐ AHC ☐ Field ☐ IMM ☐ Job Corp ☐ Peds
☐ TB ☐ GMC ☐ CHC ☐ DTC ☐ Refuge ☐ SOI
☐ Hospital ☐ OCME ☐ Student HC ☐ Other _____

Patient Medical History

Disease suspected/Diagnosed _____

Signs/Symptoms _____

US Airbill

1234 5678 9010
9999-9999-9

1. Shipper: Please print and press hard.
Date: 3/1/20
Sender's Name: _____
Company: _____
Address: 1234 Main Street
City: Phoenix State: AZ Zip: 85034

2. Your Internal Billing Reference
Recipient's Name: _____
Company: Ridgeway Design
Address: 2020 Vision Street
City: Atlanta State: GA Zip: 30305

3. To: _____
Recipient's Name: _____
Company: _____
Address: _____
City: _____ State: _____ Zip: _____

4. Express Package Service ☒ **2-1/2 Business Days**
☐ FedEx First Overnight
☐ FedEx Priority Overnight
☐ FedEx Standard Overnight
☐ FedEx 2Day
☐ FedEx Home Delivery
☐ FedEx International Economy
☐ FedEx International Priority
☐ FedEx International Express

5. Packaging ☒ **Special Handling and Delivery Signature Options**
☐ Signature Required
☐ Signature Not Required
☐ Signature Required
☐ Signature Not Required
☐ Signature Required
☐ Signature Not Required

6. Payment ☒ **Pay to Order**
☐ Pay to Order
☐ Pay to Order
☐ Pay to Order

7. Total Packages: 1 Total Weight: 450 Total Declared Value: 644

Packing and Shipping Process

SARS-CoV-2 Specimen Packing Overview

Biological substance Category B packaging checklist:

- ☐ Leak-proof/ sift-proof primary receptacle
- ☐ Cushioning and absorbent materials for liquid specimens that can absorb the entire volume of the substance
- ☐ Leak-proof/ sift-proof 95 kPa bag or tube secondary packaging
- ☐ Rigid outer packaging
- ☐ UN3373 mark
- ☐ Proper shipping name
- ☐ Shipper and consignee addresses
- ☐ Responsible person contact information on outer packaging or written documentation
- ☐ Biohazard symbol on primary or secondary packaging if the substance contains blood or is contaminated with human blood
- ☐ Itemized list of contents between secondary and outer packaging
- ☐ Air Waybill (air transport only)
- ☐ Packages including dry ice must include additional pieces of information



SARS-CoV-2 Specimens: Packing and Shipping Resources

1. CDC Laboratory Training. Packing and Shipping Dangerous Goods: What the Laboratory Staff Must Know. Updated February 24, 2021. <https://reach.cdc.gov/course/packing-and-shipping-dangerous-goods-what-laboratory-staff-must-know>. Accessed April 20, 2021.
2. Centers for Disease Control and Prevention. Interim Guidelines for Collecting and Handling of Clinical Specimens for COVID-19 Testing. Updated February 26, 2021. <https://www.cdc.gov/covid/hcp/clinical-care/clinical-specimen-guidelines.html>. Accessed April 20, 2021.
3. Federal Express. Hazardous Materials (FedEx Ground): How to Ship Service Guide. Updated 2021. <https://www.fedex.com/en-us/service-guide/hazardous-materials/how-to-ship.html> Accessed on April 21, 2021.
4. International Air Transport Association. IATA Dangerous Goods Regulations, 61st Edition. 61st ed. Montreal, Geneva: International Air Transport Association, 2019.
5. United States Postal Service. Publication 52, Hazardous, Restricted, and Perishable Mail. Updated 2020. <https://pe.usps.com/text/pub52/welcome.htm>. Accessed April 21, 2021.
6. United Parcel Service. Infectious Substances. Updated 2021. <https://www.ups.com/us/en/support/shipping-support/shipping-special-care-regulated-items/hazardous-materials-guide/shippers-responsibilities/hazardous-materials-packaging-regulations> Accessed on April 21, 2021.
7. US Department of Transportation. Hazardous Materials Regulations (HMR) Title 49 CFR Parts 100-185. Updated April 21, 2021. <https://www.ecfr.gov/current/title-49>. Accessed April 22, 2021.

cdc.gov/coronavirus