

# COLLECTING, PREPARING, AND SHIPPING Serum Specimens to CDC for Serology Testing

**NOTE:** Do not send any shipments of specimens or samples without coordination and authorization from both your state health department and CDC. Please contact **CDC Emergency Operations Center** at **1-770-488-7100** to coordinate serology testing and for specific shipping instructions.

Serology testing is only conducted on paired serum samples, which include both an acute **and** a convalescent-phase specimen



## 1 Collecting Blood for Serum

A **10 mL** volume of blood should be collected aseptically from a peripheral vein using appropriate gauge needles and a Vacutainer™ serum separator tube (SST).



Before you centrifuge the tube to separate the serum, allow the Vacutainer™-drawn blood to sit at room temperature for at least 30 minutes, but no longer than 60 minutes.

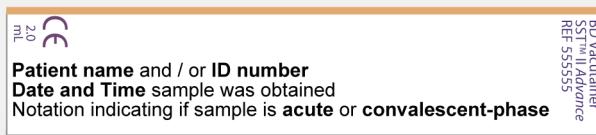


The clot should be completely formed within **30 minutes**.

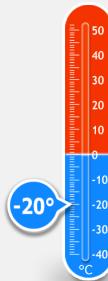
Trauma-induced hemolysis should be minimized if the blood is separated within **60 minutes** of collecting the whole blood

## 2 Separating the Serum

Centrifuge the specimen before storing or shipping in order to completely separate serum from the blood cells. After centrifuging the serum, use sterile technique to transfer the serum into plastic freezing vials with leak-proof screw-caps. Label the plastic vial(s) with all of the following:



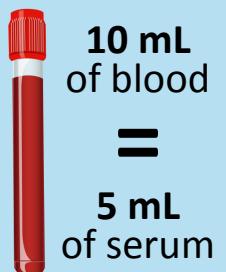
Freeze the serum immediately after it has been transferred into the plastic freezing vial(s). Store the specimen at **-20°C** or colder until it is shipped to CDC.



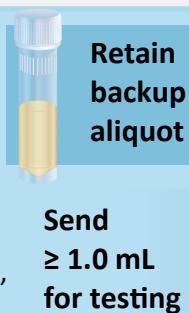
## HOW MUCH? BLOOD AND SERUM

10 mL of whole blood will approximately yield 5 mL of serum.

1.0 mL of serum is the minimum acceptable volume needed for testing.



This provides a backup sample in case the CDC sample shipment is lost or arrives in a compromised condition unsuitable for testing. **NOTE:** If 1 mL of serum is all that is available, submit the entire sample.



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## 1 Packaging the Specimen for Submission to CDC

### HOW MUCH?

#### DRY ICE MEASUREMENTS

$$6 \text{ lbs} = \text{per 1 day} \\ (3-4 \text{ kg}) = \text{of shipping}$$



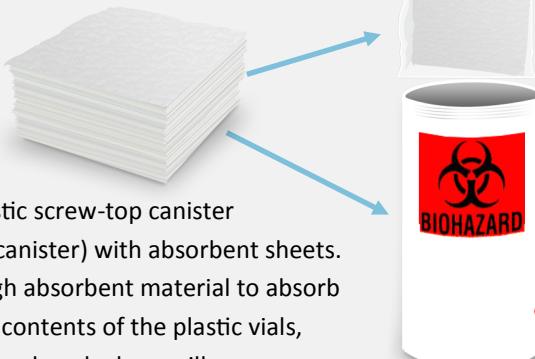
$$\text{Overnight Delivery} \\ = 2 \text{ days} = 12 \text{ lbs}$$

$$\frac{\text{Pounds}}{2} = \frac{\text{Approx. weight in kg}}$$

This number is written on the shipping label.



Insert absorbent material into a sealable plastic bag (bag #1) and place the plastic vials containing serum specimens in the bag.



Line a plastic screw-top canister (shipping canister) with absorbent sheets. Use enough absorbent material to absorb the entire contents of the plastic vials, should there be a leak or spill.

Place the sealed plastic bag into the shipping canister. Place a biohazard label on the outer surface of the shipping container.

**NOTE:** Do not put any paperwork in bag #1 containing the specimens or in the shipping canister.

Place dry ice into a polystyrene foam-lined box (the overpack). Place the shipping canister into the overpack.

Place an itemized list of contents and **CDC Form 50.34** inside a second sealable plastic bag (bag #2). Seal bag #2 and place it inside the overpack.

## 2 Labeling the package

The U.S. Department of Transportation Hazardous Materials Regulations and the International Air Transport Association (IATA) Dangerous Goods Regulations state that the following labels and markings should be placed on one side of the overpack:



**UN 3373 Biological substance, Category B label**

**Miscellaneous Class 9 label** - The dry ice label has the number 9 at the bottom of a diamond. (Shown in sidebar)

**OVERPACK label** - This indicates that secondary packaging is inside an outer box with dry ice.

**Two sets of Double up Arrows** - Place one on same side as shipping labels, and another set on the opposite side of the box

**Name and Telephone Number of Person Responsible for Shipment** - This person must be knowledgeable about the shipment and know how to remediate in case of spill or leakage.

