

## Trust BD Vacutainer® Brand System of products you can rely on

At BD we pledge to continually support the healthcare professional's need for high quality educational tools and training assistance by providing these value-added materials.

**Facts About Needlesticks** – Prepared especially for Nursing and Phlebotomy staff members, these brochures contain facts about the dangers of needlesticks and the costs associated with them.

**Videos** – Instructional videos or CDs designed to aid in training healthcare workers on BD Vacutainer® Specimen Collection Products.

**Quick Reference Cards** – Handy pocket cards provide easy reference for using BD Vacutainer® Specimen Collection Products.

**Wall Charts** – Instructional wall charts to help educate healthcare professionals.

**Clinical Documentation** – More than 100 clinical studies on a vast array of BD Vacutainer® products.

**LabNotes** – A newsletter, published by BD Diagnostics - Preanalytical Systems, to keep readers current on safety and efficiency issues in the clinical laboratory. For online subscription information, please visit [www.bd.com/vacutainer/labnotes](http://www.bd.com/vacutainer/labnotes).

**TechTalk** – A news bulletin to address frequently asked technical questions with a focus on reducing preanalytical variables

**Webinars** - Benefit from our clinical knowledge and expertise in a user-friendly webinar. Webinar program content will include relevant industry topics presented by knowledgeable keynote speakers. Visit [www.bd.com/vacutainer](http://www.bd.com/vacutainer) for upcoming webinar events.

To learn more about the full product offering of BD Vacutainer® Specimen Collection Products or the education and services offered by BD Diagnostics - Preanalytical Systems, please contact your local BD Sales Consultant or call:

**1.866.979.9408**



2100 Derry Road West,  
Suite 100  
Mississauga ON L5N 0B3  
[www.bd.com/ca](http://www.bd.com/ca)

SST



PST



EDTA



Serum



Heparin



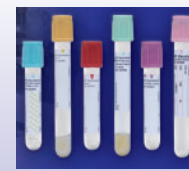
Citrate



Glucose



Specialty



Helping all people  
live healthy lives

# BD Vacutainer® Tube Guide

## LEGEND

✓ Indicates part of the  
BD Best Practice Formulary

G Indicates a glass tube

P Paper Label

ST See Thru Label



BD Vacutainer® Hemogard™  
Tube Closure



Conventional  
Tube Stopper

### PARTIAL DRAW TUBES

All BD Vacutainer® Tubes, except for Citrate, that are 13x75mm in size with a draw volume of 3.0mL or less, are considered partial draw tubes.

#### ▲ BD CLINICAL ADVANTAGE

The use of partial draw tubes may be preferred under the following circumstances:

- When a standard size tube is preferred for processing efficiencies, but a smaller draw volume is required for patient care
- When patient or equipment circumstances may require less vacuum than that produced by a full draw tube

#### ▲ BD CLINICAL ADVANTAGE:

##### What is the BD Best Practice Formulary?

The BD Best Practice Formulary (BPF), as it relates to BD Vacutainer® Blood Collection Tubes, was developed to provide customers with a condensed yet comprehensive array of BD Vacutainer® Blood Collection Tubes for virtually every clinical need. Each tube chosen for inclusion in the BPF meets the demanding requirements of today's complex diagnostic instruments and fits within the current clinical guidelines of the scientific and medical communities. The BD Best Practice Formulary provides the optimal offering for all of your clinical needs.

## Why BD Vacutainer® Plus Plastic Tubes?

There has been an increasing customer preference for safety-engineered product solutions and improved clinical performance. These preferences are being driven by marketplace trends. It is the goal of BD to provide customers with the highest quality products that are clinically proven and medically necessary.

- **Clinical Expertise:** The efficacy, performance, and ease of use of **BD Vacutainer® Plus Plastic Tubes** are **clinically proven** and supported by more than 100 clinical studies involving a vast array of analytes and diagnostic instruments. Your BD Sales Consultant can provide further information and documentation from our library of clinical data.

- **Experience:** The BD legacy of innovative medical technology dates back more than a century. Most notable of our early blood collection innovations is the introduction and subsequent patent in 1949 of **the world's first blood collection tube**. The first BD plastic blood collection tube was introduced in 1991.

This marked another technological achievement from BD that followed years of design, testing, and clinical trial evaluations.

BD produces in excess of 3.5 billion tubes annually, earning it the designation of the world's largest manufacturer of evacuated blood collection tubes. As a major worldwide medical device manufacturer, BD prides itself in manufacturing operations that maintain the highest standards for quality and efficiency. All BD Diagnostics - Preanalytical Systems manufacturing sites have achieved and maintain ISO 13485:2003 certification.

- **Compatibility:** To ensure that BD Vacutainer® Plus Plastic Tubes are compatible with major diagnostic systems, BD maintains ongoing discussions with the instrument manufacturers who are on the cutting edge of tomorrow's diagnostic technologies.

- **Safety:** BD Vacutainer® Plus Plastic Blood Collection Tubes are proven to be a safer alternative to glass. Our plastic tubes are virtually break resistant\*, thus helping to protect healthcare personnel from injury and exposure to bloodborne pathogens. The BD Vacutainer® Hemogard™ Closure is a safety-engineered closure, featuring an integrated shield that prevents human contact with blood on the stopper or tube rim and effectively guards against blood splatter and splashing.

- **Cost Effectiveness:** BD Vacutainer® Plus Plastic Tubes can be disposed of safely and efficiently by incineration, thereby reducing medical waste disposal costs.

The durability and safety of BD Vacutainer® Plus Plastic Tubes help to decrease turnaround time and improve laboratory efficiency by providing a high quality specimen and by helping to minimize risk of bloodborne pathogen infection to the laboratorian.\*

\* Data on file



# SST

BD Vacutainer® SST™ Tubes contain spray-coated silica and a polymer gel for serum separation. They are used for serum determinations in chemistry, blood donor screening and infectious disease testing. \* BD Vacutainer® SST™ Tubes provide an efficient means of serum sample preparation and help to improve laboratory workflow.

### Closure

Reference #	Tube Size (mm)	Draw Volume (mL)	Type	Colour	Label type
367983 ✓	13x75	3.5			P
367986 ✓	13x100	5.0			P
367977 ✓	13x100	4.0			P
367974	16x100	6.0			P
367988 ✓	16x100	8.5			P

### Transport tube

367987	16x100	7.5			P
367985	16x125	10.0			P

\* The performance characteristics of these tubes have not been established for infectious disease testing in general; therefore, users must validate the use of these tubes for their specific assay-instrument/reagent system combinations and specimen storage conditions.



# PST

BD Vacutainer® PST™ Tubes contain spray-coated lithium heparin and a gel for plasma separation. They are used for plasma determinations in chemistry.

### Closure

Reference #	Tube Size (mm)	Draw Volume (mL)	Type	Colour	Label type
367960 ✓	13x75	3.0			P
367961	13x100	3.5			P
367962 ✓	13x100	4.5			P
367964 ✓	16x100	8.0			P

### ▲ BD CLINICAL ADVANTAGE:

BD Vacutainer® PST™ Lithium Heparin Tubes eliminate the need to wait for a clot to form, making it an ideal tube for STAT procedures, as well as for patients receiving anticoagulant therapy. The BD Vacutainer® PST™ Tube still provides the convenience of gel separation with the added advantage of improved turnaround times.



# RST

BD Vacutainer® Rapid Serum Tubes contain a proprietary thrombin-based medical clotting agent and a polymer gel for serum separation. They are used for serum determinations in chemistry.

### Closure

Reference #	Tube Size (mm)	Draw Volume (mL)	Type	Colour	Label type
368771	13x100	4.0			P

### ▲ BD CLINICAL ADVANTAGE:

Samples processed in BD Vacutainer® Rapid Serum Tubes (RST) provide a clotted specimen in 5 minutes, resulting in clear serum\*\* for quality performance. Together this can lead to increased lab efficiency and improved patient management. The speed of plasma, the quality of serum.

\*\*Data on file.



# EDTA

BD Vacutainer® spray-coated K2EDTA Tubes are used for whole blood hematology determinations, immunohematology and blood donor screening.\*

Reference #	Tube Size (mm)	Draw Volume (mL)	Closure		
			Type	Colour	Label type
367841 ✓	13x75	2.0			P
367856 ✓	13x75	3.0			P
367861 ✓	13x75	4.0			P
367844 ✓	13x75	4.0			P
367863	13x100	6.0			P
366643	16x100	10.0			ST
367899 ✓	13x100	6.0			P**

\* The performance characteristics of these tubes have not been established for infectious disease testing in general; therefore, users must validate the use of these tubes for their specific assay-instrument/reagent system combinations and specimen storage conditions.

\*\* "Crossmatch" label designed for American Association of Blood Banks (AABB) patient identification.

## ▲ BD CLINICAL ADVANTAGE:

K2EDTA is the "anticoagulant of choice in specimen collection and blood cell counting" according to both CLSI (formerly NCCLS) and the International Council for Standardization in Haematology (ICSH)<sup>1,2</sup>. It was chosen for the following reasons:

- 1) K3EDTA results in greater RBC shrinkage;
- 2) K3EDTA produces a larger increase in cell volume on standing; and
- 3) K3EDTA is a liquid additive and will result in the dilution of the specimen. Results of directly measured values can be 1-2% lower than results with K2EDTA. K2EDTA is sprayed onto the interior of the plastic tube and like K3EDTA requires 8-10 inversions for thorough mixing of blood with the anticoagulant.

<sup>1</sup> NCCLS, Evacuated Tubes and Additives for Blood Specimen Collection – Fifth Edition; Approved Standard. NCCLS documentation H1-A5, Vol. 23, No. 33, Dec. 2003.

<sup>2</sup> International Council for Standardization in Haematology Expert Panel on Cytometry. Recommendation of the International Council for Standardization in Haematology for ethylenediaminetetraacetic acid anticoagulation for blood cell counting and sizing. Am J Clin Pathol 1993; 100:371-372.



# Serum

BD Vacutainer® Plus Plastic Serum Tubes have spray-coated silica and are used for serum determinations in chemistry. Samples processed in these tubes may also be used for routine blood donor screening, immunohematology, and diagnostic testing of serum for infectious disease.\*

Reference #	Tube Size (mm)	Draw Volume (mL)	Closure		
			Type	Colour	Label type
366434 G	13x75	5.0			P
366668	13x75	3.0			P
367812 ✓	13x75	4.0			P
367814	13x100	5.0			P
367815 ✓	13x100	6.0			P
366430 G	16x100	10.0			P
367820 ✓	16x100	10.0			P

\* The performance characteristics of these tubes have not been established for infectious disease testing in general; therefore, users must validate the use of these tubes for their specific assay-instrument/reagent system combinations and specimen storage conditions.

## DISCARD (No additive)

366703	13x75	3.0		Clear	P
366408	13x100	6.0		Clear	P

## ▲ BD CLINICAL ADVANTAGE

According to CLSI, drawing a discard volume is required for the following circumstances:

- When using a winged blood collection set for venipuncture and a coagulation (citrate) tube is the first specimen tube to be drawn, a discard tube should be drawn first. The discard tube must be used to fill the blood collection set tubing's "dead-space" with blood but the discard tube does not need to be completely filled. This important step will ensure maintenance of the proper blood-to-additive ratio of the blood specimen. The discard tube should be a nonadditive or coagulation tube.
- When a line has been flushed with a solution, it is necessary to clear the line of this fluid before drawing a specimen. The volume discarded depends on the dead-space within the line and is equivalent to 2 times the dead-space volume for noncoagulation tests, and 5 mL or six times the dead-space volume for coagulation tests.<sup>1</sup>

<sup>1</sup> CLSI, Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture - Sixth Edition; Approved Standard. CLSI documentation H3-A6, Vol. 27, No. 26, Oct. 2007.



# Heparin

BD Vacutainer® Heparin Tubes are spray-coated with either lithium heparin or sodium heparin and are used for plasma determinations in chemistry.

Reference #	Tube Size (mm)	Draw Volume (mL)	Closure		Label type
			Type	Colour	
<b>Lithium Heparin</b>					
366664	13x75	2.0			P
367884 ✓	13x75	4.0			P
367886	13x100	6.0			P
367880	16x100	10.0			P
<b>Sodium Heparin</b>					
367671 G	13x75	2.0			P
367871 ✓	13x75	4.0			P
367878	13x100	6.0			P
366480 G	16x100	10.0			P
367874	16x100	10.0			P



# Citrate

BD Vacutainer® Citrate Tubes with 3.2% buffered sodium citrate solution are used for routine coagulation studies.

BD Vacutainer® Citrate Plus Tubes now have a minimum fill indicator molded on the tube. This indicator represents the minimum volume of blood required for appropriate analysis. The nominal fill indicator on our other BD Vacutainer® Plus Tubes remains unchanged.

Reference #	Tube Size (mm)	Draw Volume (mL)	Closure		Label type
			Type	Colour	
366392 G	10.25x47	1.8			P
366393 G	10.25x64	2.7			P
363080 ✓	13x75	1.8			P
363083 ✓	13x75	2.7			P
366415 ✓ G	13x75	4.5			P
367599* G	13x75	4.5			P
369714 ✓ G	13x75	4.5			P

\*CTAD

### ▲ BD CLINICAL ADVANTAGE:

Sodium citrate concentrations can have significant effects on APTT and PT assays especially with patients receiving IV heparin therapy and when responsive reagents are used. For this reason it is very important that laboratories determine their normal range of APTT and PT based on one citrate concentration and consistently use this concentration for all patient samples. BD offers only the 3.2% citrate concentration, as recommended by CLSI.<sup>1</sup>

Use the BD Vacutainer® CTAD tube to increase the accuracy of hemostasis testing. The CTAD solution is a mixture of sodium citrate, theophylline, adenosine and dipyridamole, designed to minimize in vitro platelet activation, thereby reducing the risk of heparin patient mismanagement.

<sup>1</sup> NCCLS, Collection, Transport and Processing of Blood Specimens for Coagulation Testing and General Performance of Coagulation Assays - Third Edition; Approved Guideline. NCCLS documentation H21-A3, Vol. 18, No. 20, Dec. 1998.



# Glucose

BD Vacutainer® Fluoride Tubes contain a glycolytic inhibitor and are used for glucose determinations on plasma. Unless otherwise noted, all BD Vacutainer® Fluoride Tubes contain a mixture of potassium oxalate and sodium fluoride.

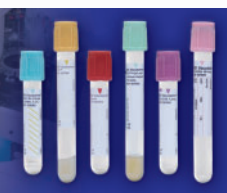
Reference #	Tube Size (mm)	Draw Volume (mL)	Closure		Label type
			Type	Colour	
367587* ✓	13x75	2.0			P
367921	13x75	2.0			P
367922 ✓	13x75	4.0			P
367925	13x100	6.0			P

\*Contains Na<sub>2</sub>EDTA

### ▲ BD CLINICAL ADVANTAGE:

Hemolysis interferes with recommended methodologies (Hexokinase or Glucose Oxidase) used for glucose analysis. The combination of Sodium Fluoride as the antiglycolytic agent and EDTA as the anticoagulant yields plasma samples with a stable glucose result over time and a nonhemolyzed specimen. Therefore BD Vacutainer® Fluoride Tubes containing Disodium EDTA with Sodium Fluoride may be preferred when storing samples for up to 24 hours.\*\*

\*\*Data on file.



# Specialty Tubes

BD Vacutainer® Specialty Tubes

Reference #	Description	Tube Size (mm)	Draw Volume (mL)	Closure		Label type
				Type	Colour	
<b>Specialty - Trace Element</b>						
368380	Serum Tube with Clot Activator	13x100	6.0			P
368381	Tube with K <sub>2</sub> EDTA 10.8 mg	13x100	6.0			P
<b>Specialty - ACD</b>						
364816 G	Tube with ACD Solution B 1.0ml	13x100	6.0			P
364606 G	Tube with ACD Solution A 1.5ml	16x100	8.5			P

Specialty Tubes Continued on Next Page



# Specialty Tubes CONT'D

BD Vacutainer® Specialty Tubes

Reference #	Description	Tube Size (mm)	Draw Volume (mL)	Closure		Label type
				Type	Colour	
<b>Specialty - Sedimentation Rate Determination (SDR)</b>						
366676 G	Tube with Buffered Citrate .105M, CE Marked	8x100	1.8			P
369741 G	Tube with Buffered Citrate .105M	13x75	2.4			P
366465 G	Tube with Buffered Citrate .129M	13x100	4.0			P
366065* G	Tube with Buffered Citrate .105M, CE Marked	10x120	5.0			P
366666* G	Tube with Buffered Citrate .105M, CE Marked	10x120	5.0			P
<b>Specialty - Sodium Polyanetholesulfonate (SPS)</b>						
366404 G	Whole Blood Tube with Additive 0.68ml	10.25x82	3.32			P
364960 G	Whole Blood Tube with Additive 1.7ml	16x100	8.3			ST
<b>Specialty - Thrombin</b>						
367755 G	Serum tube, silicone-coated interior with Thrombin 1.4 NIH units	13x100	7.0			P
366525 G	Serum tube, silicone-coated interior with Thrombin 2.0 NIH units	16x100	10.0			P
<b>Specialty - Miscellaneous</b>						
367855	Tube with K2EDTA (spray-dried) for Lead Testing	13x75	3.0			P
366401 G	Two tubes packaged together in a sterile pouch - Serum tube, silicone coated - K3EDTA tube	16x100	10.0			P
		13x100	7.0			P
367001 G	Tube with 100mg Sod Fluoride/20mg Pot Oxalate, for Blood Alcohol Testing	16x100	10.0			P













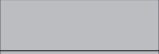




















\* For use with BD Seditainer™ Rack (366016)

Specialty Tubes Continued on Next Page



# Specialty Tubes CONT'D

BD Vacutainer® Specialty Tubes

Reference #	Description	Tube Size (mm)	Draw Volume (mL)	Closure		Label type
				Type	Colour	
<b>Molecular</b>						
362753 G	Tube with polymer gel and sodium heparin for mononuclear cell preparation (CPT)	16x125	8.0			Mylar
362760 G	Tube with polymer gel and sodium citrate for mononuclear cell preparation (CPT)	13x100	4.0			Mylar
362761 G	Tube with polymer gel and sodium citrate for mononuclear cell preparation (CPT)	16x125	8.0			Mylar
362788 ✓	Plasma Preparation Tube (PPT) with K2EDTA and Gel for Separation	13x100	5.0			Mylar
762165	PAXgene Blood RNA Tube, CE marked	16x100	2.5		Clear	P
<b>Urine</b>						
364951	C&S Tube with Preservative, Round Bottom	13x75	4.0			P
364953	C&S Kit with Transfer Straw	13x75	4.0			P
364954	C&S Kits with Cup & Towelette	13x75	4.0			P
364980	UA Tube without Preservative, Conical Bottom	16x100	8.0			P
364979	UA Tube without Preservative, Round Bottom	16x100	10.0			P
364992	UA Tube with Preservative, Conical Bottom	16x100	8.0			P
364991	Urinalysis Kit with Transfer Straw	16x100	8.0			P
364990	Urinalysis Kit with Transfer Straw	16x100	10.0			P
364943	Urinalysis Kit with Transfer Straw	16x100	8.0			P
364956	Complete Combination Kits (C&S 364951 + UA 364980)					
364957	Complete Combination Kits (C&S 364951 + UAP 364992)					
364946	Urinalysis Kits with Cup	16x100	8.0			P
364981	Urinalysis Kits with Cup	16x100	10.0			P
364989	Urinalysis Kits with Cup	16x100	8.0			P