

BD Life Sciences Preanalytical Systems

Product Catalogue 2016 - 2017



BD

Advancing the
world of health

Highlights

Preanalytical Quality Check

Using our expertise, we examine your institution's preanalytical phase quality and processes from device storage, sample collection up to sample analysis. At each stage of your blood collection process, we identify and monitor possible causes of preanalytical errors to help you understand your current practices versus your hospital's procedures and best practice.

[Find out more on page 3](#)

NEW BD Vacutainer® Barricor™

Unveiling the true potential of Plasma for Chemistry Testing

The BD Barricor cutting edge mechanical separator helps to lower platelet counts within the sample by staying open throughout the centrifugation cycle, allowing cells to continuously sediment from the plasma.

The end result is a better quality sample, leading to greater efficiency and more accurate results.

[Find out more on page 15](#)

NEW BD Vacutainer® Next Generation Safety Needles

BD Vacutainer® Eclipse™ Signal™

Feel confident from start to finish

- Ergonomic design provides flexible angle of entry and better handling for venepuncture
- InstaFlash™ technology instantly signals vein entry for improved first stick proficiency
- The fastest flow among BD safety straight needles

[Find out more on page 35](#)

BD Vacutainer® Ultratouch™ Push Button

A new blood collection experience

Engineered to improve patient comfort during blood collection with PentaPoint™ Comfort and RightGauge™ ultra-thin wall technology.

- Reduces accidental needlestick injuries up to 88%
- Greater patient comfort
- Improved venepuncture

[Find out more on page 38](#)

NEW Transport Solutions

MoveBag & MoveBox system for interlaboratory transportation

The biological specimen transportation system ensures your laboratory complies with international regulations.

[Find out more on page 51](#)



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About BD

In 1897, Maxwell Becton and Fairleigh Dickinson founded Becton, Dickinson and Company with a vision to improve outcomes for patients. For the century that followed, the company held true to that vision. BD diversified into diagnostics, biosciences and a wide range of medical devices. But we knew we could do more and have an even greater impact on the world of health.

Enter CareFusion in 2015. The complementary nature of BD and CareFusion capabilities make the new, combined company more relevant than ever before. It's not just the solutions we offer, it's also where we offer them. The global reach of the combined company can offer new solutions around the world. And that's just what we're doing.

The combination also brings together the people in each company. People with a deep passion for helping patients directly or through our other customers. And the combined company gives us even more opportunities to help people. BD is the place for our associates to pursue their life's purpose through their life's work.

And, as we enter 2016, we are bringing in the "new." New ideas for products. New solutions for customers. New ways to help patients be healthy and safe. In other words, a new era in healthcare.

BD is excited about what our future holds, and we are glad you will join us on this journey. We look forward to Advancing the World of Health with you.

BD Worldwide Segments

BD Medical

Diabetes Care

Medication Management Solutions

Medication & Procedural Solutions

Pharmaceutical Systems

BD Life Sciences

Biosciences

Diagnostic Systems

Preanalytical Systems

BD European Manufacturing and Distribution Sites

Every day millions of BD Vacutainer® Blood Collection Tubes are manufactured in the UK and used worldwide.

Plymouth Manufacturing



Our plant in Plymouth is recognised as a centre of manufacturing excellence - continued investment in quality and cutting-edge technologies has led to world-class process controls which help to deliver a unique level of service to customers. Furthermore, the Plymouth plant's innovation has resulted in it receiving the EEF Environmental Efficiency Award in 2010.

Today, 600 employees manufacture over 200 different products, including BD Vacutainer® tubes for haematology, coagulation and chemistry.

BD Vacutainer® products manufactured in Plymouth help to improve throughout the world:

- the efficiency of laboratory processes
- the quality of laboratory test results for patients
- the safety of health care workers.

BD in the Benelux plays a major role in the Company's ability to meet the growing demand in Eastern and Western Europe, the Middle East and Africa.

European Distribution Center



- In October 1991, BD opened two state-of-the-art distribution centres in Temse (Belgium).
- The highly automated facilities store products and process orders for rapid delivery throughout Europe, the Middle East and Africa.
- In 2009, BD completed a 51,000-square-meter expansion and renovation to meet growing demand in the region.
- The distribution centre stores more than 60,000 pallets and processes more than 650,000 orders each year.

Community Relations

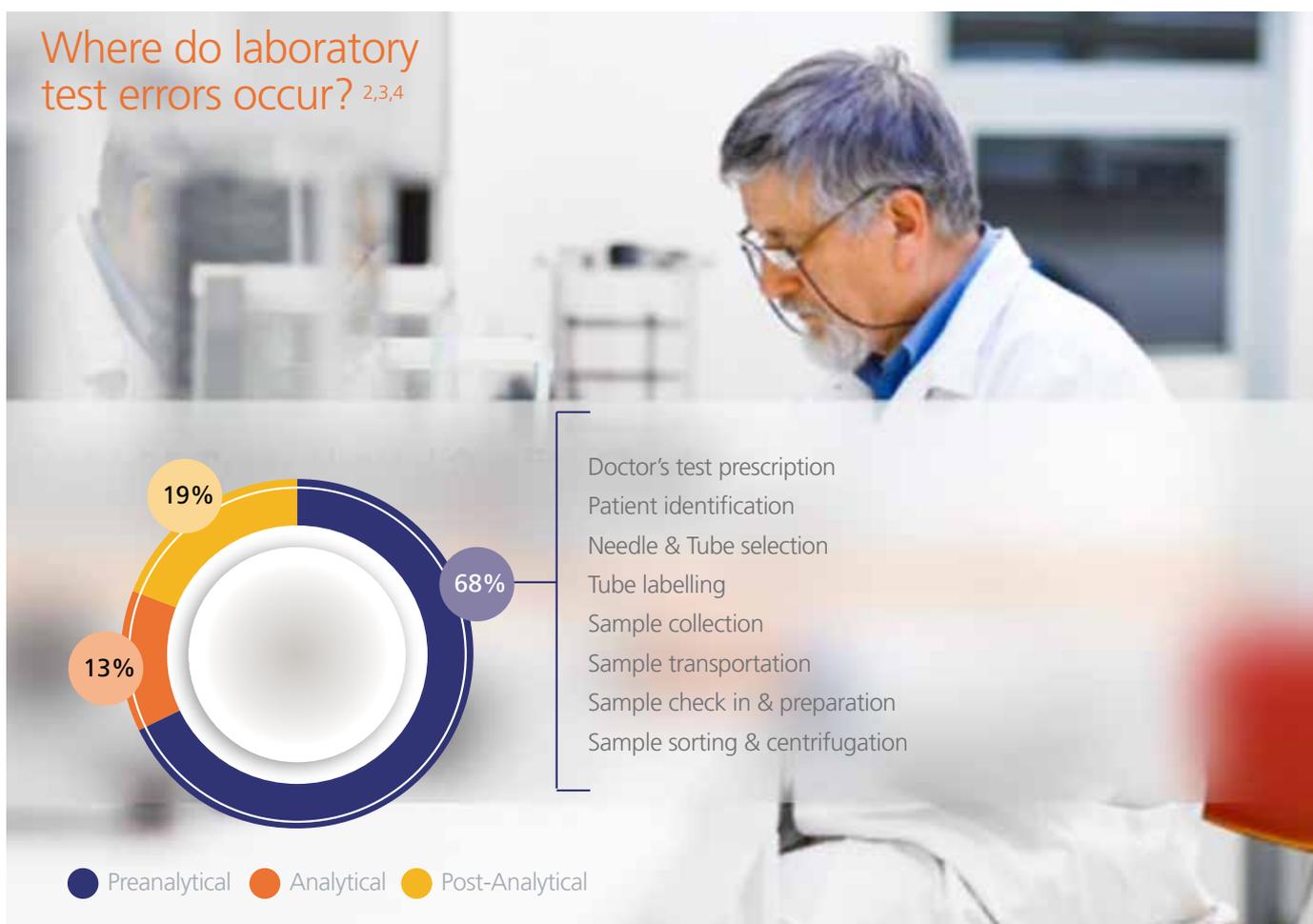
BD's Temse distribution centre plays an important role in the Company's efforts to build stronger, healthier communities and to provide essential medical supplies in the wake of natural disasters and other emergencies. The facility has coordinated the distribution of product donations to a number of BD's Trusted Partners which provide a variety of medical services and relief to people around the world, including victims of the 2004 Tsunami in Southeast Asia and the 2006 earthquake in Pakistan.

Preanalytical Quality Check, Part of the BD Laboratory Consulting Services®

**Errors in phlebotomy may lead to patient suffering and compromised patient safety.¹
The quality of the preanalytical phase impacts clinical outcomes**

When it comes to blood collection, the majority of errors occur in the preanalytical phase because it is such a complex process involving many people across multiple geographic sites. Staff outside the laboratory may not realise that preanalytical errors are a significant problem or their impact on test result accuracy.

Patients are demanding that healthcare institutions do a better job in reducing errors so the laboratory's role in providing a quality service is becoming even more critical.



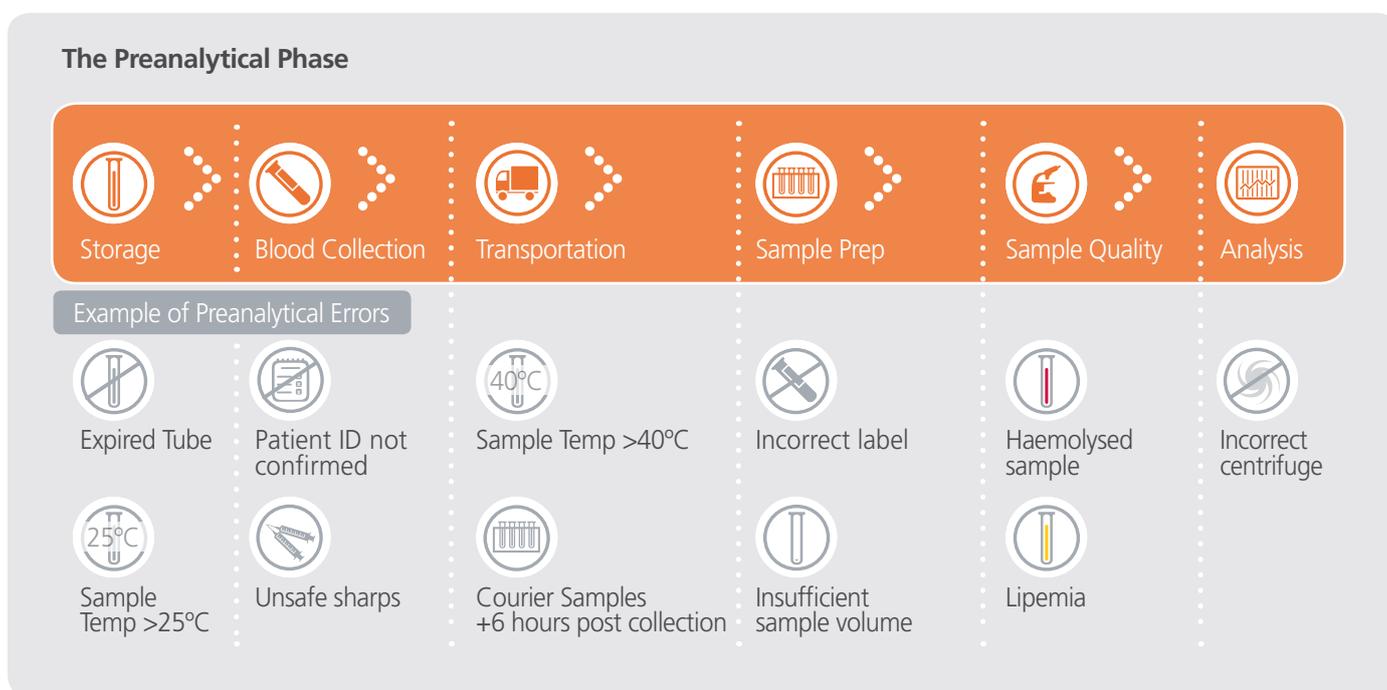
Poor sample quality affects compliance to standards and regulations

Meeting accreditation standards such as ISO15189 Clinical Laboratory Accreditation requires laboratories to document, measure and regularly monitor their procedures for proper sample collection and handling.⁵

So how can busy laboratories already under pressure to balance the provision of quality samples with the demands of clinical and budgetary targets be confident that their systems and processing are working effectively?

Introducing the BD Preanalytical Quality Check Part of the BD Laboratory Consulting Services® Solution

Using our expertise, we examine your institution's preanalytical phase quality and processes from device storage, sample collection up to sample analysis. At each stage of your blood collection process, we identify and monitor possible causes of preanalytical errors to help you understand your current practices versus your hospital's procedures and best practice.



How does the BD Preanalytical Quality Check support your goal of improved quality and compliance?

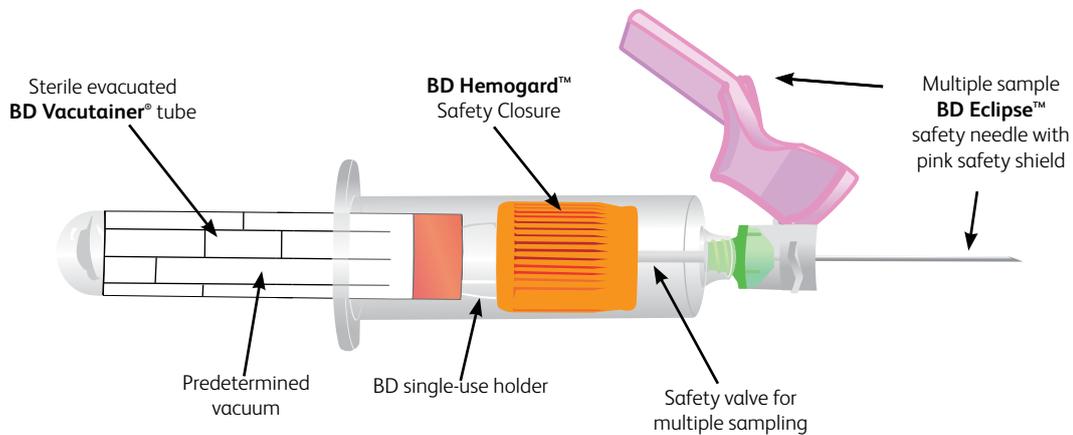
- Delivered by an experienced team of BD Clinical Specialists
- First key findings delivered in 24 hours post data collection
- Final consultation report provides detailed data analysis supporting recommendations for improvements
- Benchmarked results show how well your organisation is performing versus your peers

1. Simundic AM, Cornes M, Grankvist K, Lippi G, Nybo M, Kovalevskaya S, Spongl L, Sumarac Z, Church S. Survey of national guidelines, education and training on phlebotomy in 28 European countries: an original report by the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) working group for the preanalytical phase (WG-PA). Clin Chem Lab Med 2013; 51(8): 1585-1593
 2. Bonini P, Plebani M, Cerotti F, Bubboli F. Errors in laboratory medicine. Clin Chem 2002;48:691-698
 3. Plebani M, Carraro P. Mistakes in a Stat Laboratory: types and frequency. Clin Chem 1997, 43(8):1348-1351
 4. Carraro P & Plebani M. Errors in a Stat Laboratory: types and frequency 10 years later. Clinical Chemistry 2007, 53(7): 1338-1342
 5. International Standard ISO15189 Medical laboratories- Requirements for quality and competence Third edition 2012-11-01

Venous blood sampling

Introduction

The **BD Vacutainer**[®] blood collection system is a closed evacuated system, which consists of a sterile double-ended needle with safety valve, **BD Vacutainer**[®] holder and sterile **BD Vacutainer**[®] evacuated blood collection tubes with predetermined vacuum.



Blood is collected by assembling the sleeve-covered non-patient (NP) end of the needle into the holder, then puncturing the patient's vein with the intravenous end. After performing venepuncture, multiple tubes can then be pushed into the holder one at a time, and the predetermined vacuum of the tube allows the required volume of blood to be collected, thus resulting in an optimal blood to additive ratio.

There are many advantages to using the **BD Vacutainer**[®] blood collection system. Some of the most important are:

- It prevents exposure by ensuring blood flows directly from the patient vein into the tube.
- There is a wide range of colour-coded tubes available with additives for a variety of analytical tests covering laboratory disciplines.
- There is no manual influence on the drawing of blood so the process remains consistent. The system is a more reliable alternative to the traditional needle and syringe technique¹.

The tube cap closures are colour-coded according to the additive and the international standard (ISO 6710). Low draw volume tubes have a translucent version of the equivalent standard draw volume product.

1. BD Ref. VS5391 - Evaluation of Sample Quality And Analytic Results Between Specimens Collected in BD Vacutainer[®] Tubes and Current Syringe Collections. BD, Franklin Lakes, NJ, USA, November 1998

Venous blood sampling

Order of draw

Recommendations CLSI (NCCLS), Vol. 23, No. 32, 8.10.2

| With a Needle: | With a Wingset: With Blood Culture | With a Wingset: Without Blood Culture |
|--|--|--|
| 1.  | 1. Blood Culture Bottles (aerobic, anaerobic) | 1.  Discard tube |
| 2.   | 2.  | 2.  |
| 3.   | 3.   | 3.   |
| 4.  | 4.   | 4.   |
| 5.  | 5.  | 5.  |
| 6. Others (ACD, VS, Aprotinine and Thrombine) | 6.  | 6.  |
| | 7. Others (ACD, VS, Aprotinine and Thrombine) | 7. Others (ACD, VS, Aprotinine and Thrombine) |

Colour code - followed by BD is as described in ISO 6710:1995 and is used by BD for the majority of our product portfolio. Certain tubes in this catalogue do not follow the established colour code and are intended to enable tube differentiation in process automation and product flow through the laboratory. Our tubes produce a specific type of sample and the cap colour is intended to differentiate from regular tubes. If ordering these tubes, it is important to ensure that the appropriate staff in your organization is aware of these differences. Using the wrong tube for any given test may result in analytical error.

Venous blood sampling

Coagulation analysis

Sodium citrate

Trisodium citrate is used as an anticoagulant for coagulation investigations. It works as an anticoagulant as it forms complexes with metal ions such as calcium inhibiting the coagulation cascade. Anticoagulation with trisodium citrate is reversible.

BD Vacutainer® Citrate tubes contain buffered citrate in accordance with recommendations:

The blood to additive ratio is 9:1.

The citrate solution in the BD Vacutainer® acts as a buffer. Therefore, no additional buffer substances are added as these can adversely affect laboratory analysis.

BD Vacutainer® Citrate tubes are also suitable for carrying out special test procedures such as the platelet function test PFA-100®*. Special tubes and the associated additional costs are therefore unnecessary.

Glass tubes

All BD Vacutainer® glass coagulation tubes have an internal coating of a special silicone to minimise contact activation.

BD Vacutainer® Plus (plastic) citrate tubes

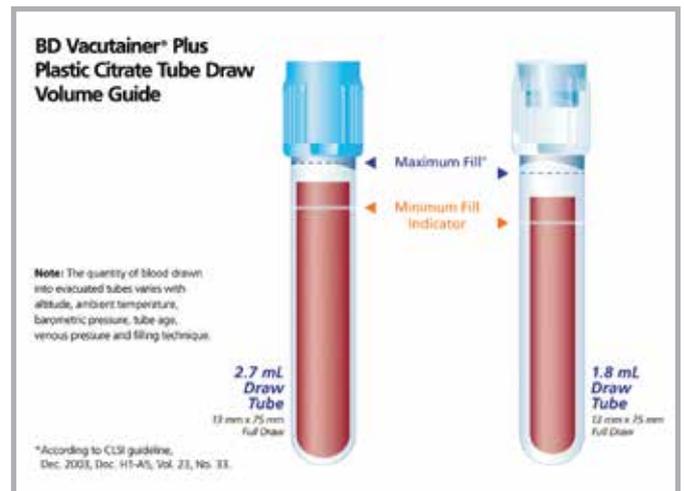
The Plus citrate tubes feature innovative tube geometry that minimises tube headspace and associated platelet activation to optimise APTT monitoring of unfractionated heparin patients.

BD Vacutainer® Plus Citrate tubes combine the following advantages:

- Clinically equivalent performance to the recognised global 'Gold Standard', the 4.5mL BD Vacutainer® Glass Buffered Citrate tube.¹
- Clinically proven in multi-centre clinical trials for coagulation testing across all major patient populations.
- Evaluated with the most widely used coagulation analytical systems.²

Fill line marking

The significance of the correct ratio of blood to additive for coagulation samples is well documented. The correct fill amount is critical for correct coagulation analysis. All BD Vacutainer® Plus plastic coagulation tubes have a mark indicating the minimum fill level.



Centrifuging conditions:

For coagulation analyses different plasma specifications can be obtained from the citrated blood

- Platelet rich plasma:
150-200 g for 5 minutes at 18-25°C
- Platelet poor plasma:
2000-2500 g for 10-15 minutes at 18-25°C
- Platelet free plasma:
>3000 g for 15-30 minutes at 18-25°C

BD recommends that glass tubes are not centrifuged at more than 2200 g in a swing-out rotor (for fixed angle rotor not more than 1300g).

Mixing recommendation:

Citrate tubes should be gently inverted 180° and back 3-4 times.

* PFA-100 is a registered trade mark of Siemens.

1. BD Ref. VS5936 Evaluation of BD Vacutainer® Plus 2.7 and 1.8mL Sodium Citrate Coagulation Tubes Using The ELECTRA 1400c™ Analyser. BD, Franklin Lakes, NJ, USA November 2001
2. BD Ref. VS5966 Evaluation of 0.109M BD Vacutainer® Plus Plastic and 0.105M BD Vacutainer® Glass Sodium Citrate Tubes for PT and APTT Using the Sysmex CA - 1500 Analyzer. BD, Franklin Lakes, NJ, USA June 2002

Venous blood sampling

Coagulation analysis

BD Vacutainer® Citrate tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|----------------------------|----------|-------------|---|
| 363047 | 1.8 | 13x75 | Na Citrate (0.109M = 3.2%) | PET PP | Paper |  |
| 368273 | 1.8 | 13x75 | Na Citrate (0.109M = 3.2%) | PET | Transparent |  |
| 363048 | 2.7 | 13x75 | Na Citrate (0.109M = 3.2%) | PET | Paper |  |
| 364305 | 2.7 | 13x75 | Na Citrate (0.109M = 3.2%) | PET | Transparent |  |
| 367714 | 4.5 | 13x75 | Na Citrate (0.105M = 3.2%) | Glass | Paper |  |
| 366575 | 6 | 13x100 | Na Citrate (0.105M = 3.2%) | Glass | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

Venous blood sampling

Coagulation analysis

BD Vacutainer® CTAD tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---------------|----------|-------|---|
| 367562 | 2.7 | 13x75 | CTAD | Glass | Paper |  |
| 367599 | 4.5 | 13x75 | CTAD | Glass | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

BD Vacutainer® CTAD tubes

The CTAD solution consists of:

- 0.11 M buffered trisodium citrate solution
- 15 M theophylline
- 3.7 M adenosine
- 0.198 M dipyridamole

The pH value is 5.0.

The additives act directly on the platelets and inhibit the platelet factor 4 (PF4) distribution. False positive test results caused by the inhibiting effect of PF4 on the heparin reversal in the blood are therefore reduced.

BD Vacutainer® CTAD tubes are ideal for patients undergoing anticoagulant therapy, but it can also be used for routine coagulation analysis.



Centrifugation conditions:

1500 g for 15 minutes at 18-25°C

Mixing recommendation:

CTAD tubes should be gently inverted 180° and back 3-4 times.

Venous blood sampling

Serum analysis

Serum tubes

In order to obtain serum samples from plastic tubes, the tube must have a coagulation activator added. As the plastic surface alone is insufficient to trigger the coagulation within an acceptable time, BD Vacutainer® Plus plastic serum tubes have silica particles added for this purpose. These tubes are marked with the acronym CAT (Clot Activator Tube).

Clotting times

The recommended minimum time for the coagulation of samples from patients who have not been treated with anticoagulants is 60 minutes for serum (red) and 5 minutes for thrombin (orange) tubes.

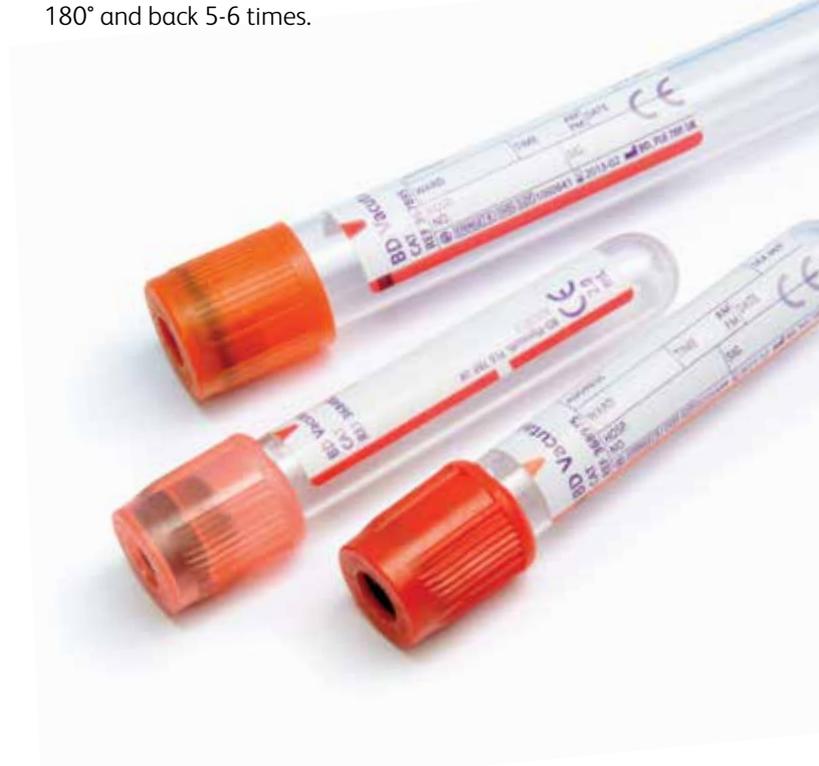
Centrifuging conditions:

≤ 1200 g for 10 minutes at 18-25°C for glass serum tubes

≤ 1300 g for 10 minutes at 18-25°C for plastic serum tubes

Mixing recommendation:

Both plastic and glass serum tubes should be gently inverted 180° and back 5-6 times.



BD Vacutainer® Serum tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-------------------------|----------|-------------|---|
| 368492 | 2 | 13x75 | Silica (Clot Activator) | PET | Paper |  |
| 368271 | 2 | 13x75 | Silica (Clot Activator) | PET | Transparent |  |
| 369032 | 4 | 13x75 | Silica (Clot Activator) | PET | Paper |  |
| 365904 | 4 | 13x75 | Silica (Clot Activator) | PET | Transparent |  |
| 368815 | 6 | 13x100 | Silica (Clot Activator) | PET | Paper |  |
| 368814 | 6 | 13x100 | Silica (Clot Activator) | PET | Paper |  |
| 367819 | 6 | 13x100 | Silica (Clot Activator) | PET | Transparent |  |
| 367896 | 10 | 16x100 | Silica (Clot Activator) | PET | Paper |  |
| 367614 | 5 | 13x75 | No Additive/Silicone | Glass | Paper |  |
| 367624 | 5 | 13x75 | No Additive/No Silicone | Glass | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

Venous blood sampling

Serum analysis

BD Vacutainer® Thrombin tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---------------|----------|-------|---|
| 367817 | 4.8 | 13x75 | Thrombin | PET | Paper |  |
| 367811 | 6 | 13x100 | Thrombin | PET | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

BD Vacutainer® Evacuated Secondary Tube (EST)

BD Vacutainer® EST has no additives and is suitable as a secondary tube for anti-coagulated blood samples, for

example for taking plasma samples from blood bags.
The EST can also be used as a discard tube.

BD Vacutainer® EST tube

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---------------|----------|-------------|---|
| 362725 | 3 | 13x75 | No additive | PET | Transparent |  |
| 364917 | 11 | 16x100 | No additive | PET | Paper |  |

Venous blood sampling

Serum analysis

BD Vacutainer® SST™ II Advance tubes

During the centrifugation of the BD Vacutainer® SST™ II Advance tubes, an inert gel separates the serum and the blood clot preventing the contamination of the serum from the separated cellular components. For example, the serum for certain analytes such as potassium, phosphorus and glucose must be separated from the cells within a few hours - otherwise the results will be significantly distorted. Using BD SST™ II Advance tubes routine analytes in clinical chemistry such as potassium and glucose are still stable after a week of storage at 2-8°C. Clinical evaluations of special chemistry demonstrate a high degree of analyte stability with the acrylic gel in the BD SST™ II Advance, with detection of >90% of the therapeutic drugs and other special analytes (proteins/peptides, steroids and vitamins) tested.

As a result of the type of gel used in the BD Vacutainer® SST™ II Advance tubes, short centrifugation times of 5 minutes at 3000 g can be achieved. The stability of the gel barrier is a distinct advantage during transport and storage.

The main advantages of gel tubes versus non-gel tubes are:

- Stable barrier between serum and clotted blood, therefore better analyte stability
- Better sample quality
- Optimisation of the work flow: Short centrifugation time, sample processing and archiving in the primary tube
- No possibility of misidentification due to the use of secondary tubes

Clotting times

The minimum recommended coagulation time for BD Vacutainer® SST™ II Advance tubes for patients who have not received anticoagulation treatment is 30 minutes.

Centrifugation conditions:

1300-2000 g for 10 minutes or alternatively, according to the BD study VS7228 3000 g for 5 minutes at 18-25°C¹.

Mixing recommendation:

Serum Separation Tubes should be gently inverted 180° and back 5-6 times.



Effects of temperature

BD Vacutainer® SST™ II Advance should be stored at 4-25°C and protected from direct sunlight during storage. Cooling of the tube by or during centrifuging can affect the movement capability of the gel. The optimum separation of serum and coagulated blood is achieved at a temperature of 20-25°C.

Clot activator

BD Vacutainer® SST™ II Advance tubes contain silica particles.

Studies

We would be pleased to supply study documentation in relation to BD Vacutainer® SST™ II Advance tubes on request.



Patented separating gel technology with unique gel design.

Venous blood sampling

Serum analysis

BD Vacutainer® SST™ II Advance tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-----------------------------|----------|-------------|---|
| 366882* | 2.5 | 13x75 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 367957 | 3.5 | 13x75 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 368498 | 3.5 | 13x75 | Silica (Clot Activator)/Gel | PET | Transparent |  |
| 368965 | 3.5 | 13x75 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 368966 | 3.5 | 13x75 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 368967 | 3.5 | 13x75 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 368879* | 4 | 13x100 | Silica (Clot Activator)/Gel | PET | Transparent |  |
| 367955 | 5 | 13x100 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 366566 | 5 | 13x100 | Silica (Clot Activator)/Gel | PET | Transparent |  |
| 368968 | 5 | 13x100 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 368969 | 5 | 13x100 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 368970 | 5 | 13x100 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 366444* | 6 | 16x100 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 367953 | 8.5 | 16x100 | Silica (Clot Activator)/Gel | PET | Paper |  |
| 366644 | 8.5 | 16x100 | Silica (Clot Activator)/Gel | PET | Transparent |  |
| 366468 | 8.5 | 16x100 | Silica (Clot Activator)/Gel | PET | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

* These tubes reduce the risk of hemolysis.

Venous blood sampling

Serum analysis

BD Vacutainer® Rapid Serum Tube (RST)

This tube combines the advantages of a thrombin based clot activator with a gel barrier and enables rapid results as well as optimising the process.

The clot activator produces high quality serum.

- These tubes can be centrifuged 5 minutes after the blood sample is taken
- The gel barrier optimises the sample workflow

Clotting times

The recommended minimum coagulation time for serum tubes from patients not receiving anti-coagulant therapy is 5 minutes for BD Rapid Serum tubes.

Centrifuging conditions:

4000 g for 3 minutes at 23-27 °C or
2000 g for 4 minutes at 23-27 °C or
1500-2000 g for 10 minutes at 23-27 °C

Mixing recommendation:

Rapid Serum Tubes should be gently inverted 180° and back 5-6 times.

Studies

We would be pleased to supply study documentation in relation to RST tubes on request.

BD Vacutainer® Rapid Serum tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---------------|----------|-------|---|
| 368774 | 5 | 13x100 | Thrombin/Gel | PET | Paper |  |

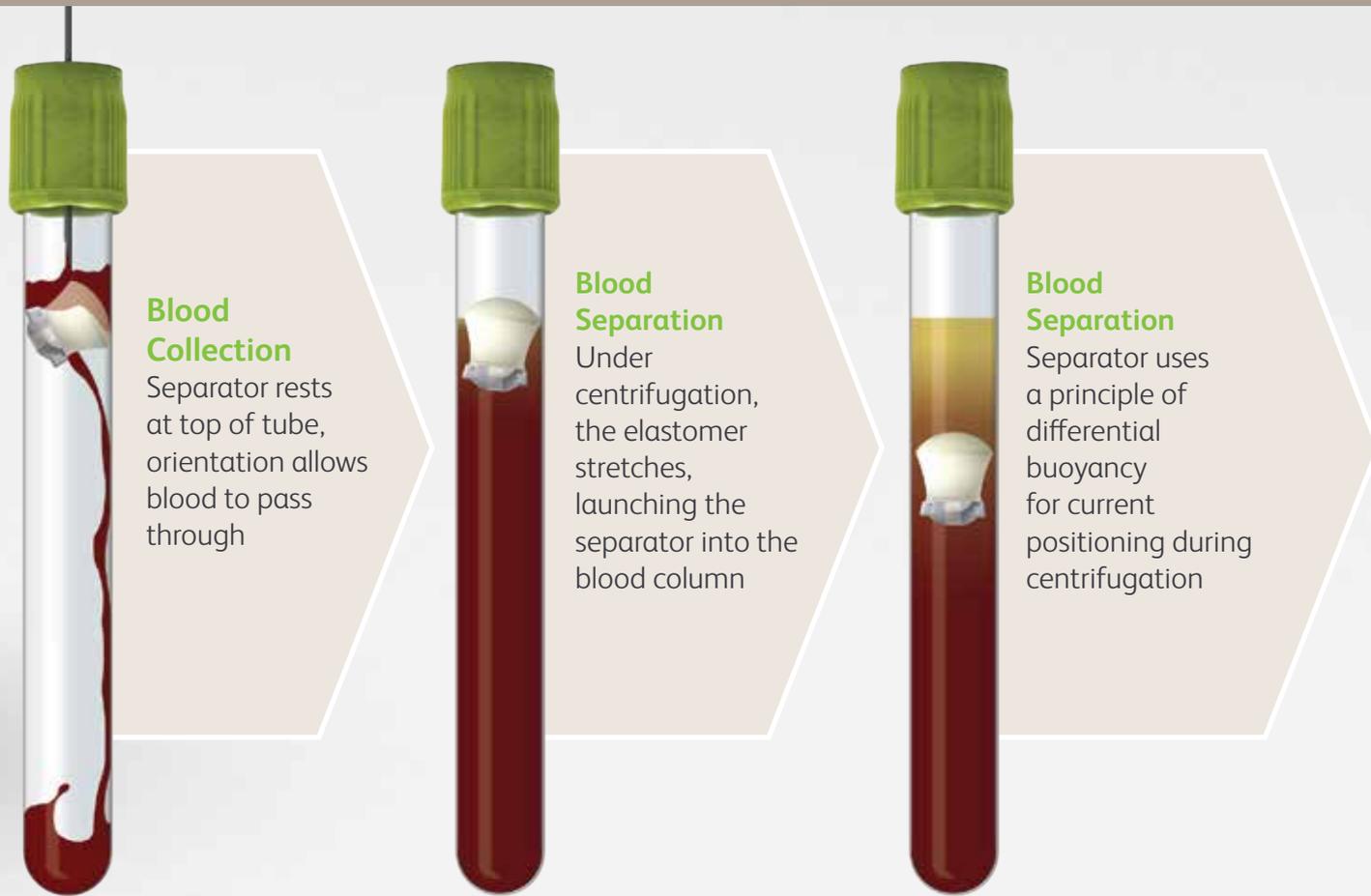
All tubes are supplied in boxes of 100 / cases of 1000.

Please contact us for the BD Interactive Centrifugation Guide for BD Vacutainer® Blood Collection Tubes.



Venous blood sampling

Plasma analysis



BD Vacutainer® Barricor™ plasma tubes

BD Barricor™ Tubes are sterile (interior), single-use, evacuated blood collection tubes for collecting, separating, processing, transporting, and storing plasma in a closed tube. These products are comprised of a plastic tube containing a mechanical separator (instead of gel), a low-zinc stopper and a plastic BD Hemogard™ color-coded Lime Green or Kelly Green safety-engineered shield. Tube stopper and mechanical separator are lubricated with silicone based surfactant to facilitate product assembly.

The main advantages of BD Barricor™ technology are:

- Inert barrier between plasma and cells, therefore extended analyte stability
- Improved sample purity as the barrier remains open during the entire centrifugation process
- Optimisation of the work flow: short centrifugation time, sample processing and archiving in the primary tube
- No possibility of confusion due to the use of secondary tubes
- Reduces instrument downtime as BD Barricor™ tubes eliminate the risk of instrument probe contamination

Effects of temperature

BD Barricor™ tubes should be stored at 4-25°C and protected from direct sunlight during storage

Centrifugation conditions at 18-25°C:

- 4000 to 5000 g for 3 minutes
- 3000 to 3999 g for 5 minutes
- 2500 to 2999 g for 7 minutes
- 1800 to 2499 g for 10 minutes

Mixing recommendation:

BD Barricor™ tubes should be gently inverted 180° and back 8-10 times. Correct mixing of the BD Barricor™ tube immediately after the blood sample has been taken, is extremely important to avoid microclotting.

Studies

We would be pleased to supply study documentation in relation to BD Barricor™ tubes on request.

Venous blood sampling

Plasma analysis

NEW



Blood Separation

When stretched, channels are created around the separator allowing blood cells to flow out of the plasma – a feature that differentiates BD Barricor™ from gel tubes



Blood Separation

When the centrifuge slows, the elastomer returns to its original shape forming a seal between the plasma above and blood cells below, creating a stable robust barrier

NEW BD Vacutainer® Barricor™ tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-----------------|----------|-------------|---|
| 365031 | 3 | 13x75 | Lithium Heparin | PET | Paper |  |
| 365035 | 3 | 13x75 | Lithium Heparin | PET | Transparent |  |
| 365034 | 3.5 | 13x100 | Lithium Heparin | PET | Paper |  |
| 365030 | 4.5 | 13x100 | Lithium Heparin | PET | Paper |  |
| 365033 | 4.5 | 13x100 | Lithium Heparin | PET | Transparent |  |
| 365042 | 5 | 13x100 | Lithium Heparin | PET | Transparent |  |
| 365039 | 5.5 | 13x100 | Lithium Heparin | PET | Paper |  |
| 365040 | 5.5 | 13x100 | Lithium Heparin | PET | Transparent |  |

Venous blood sampling

Plasma analysis

Lithium Heparin/Sodium Heparin

BD Vacutainer® plasma tubes for clinical chemistry are available with spray-dried sodium heparin or lithium heparin additives. Heparin acts as an anticoagulant as it develops an antithrombin complex.

The optimum anticoagulation is achieved in all BD Vacutainer® tubes by the use of 17 IU pharmaceutical grade heparin per mL of blood when the fill level is correct. The lithium heparin in BD Vacutainer® tubes is spray dried onto the inner walls of the tubes using a special procedure so that the additive is evenly distributed to achieve the best possible solubility. For clinical chemistry, lithium heparin is generally preferred over sodium heparin.

Centrifugation conditions:

≤ 1300 g for 10 minutes at 18-25°C

Mixing recommendation:

Plasma tubes should be gently inverted 180° and back 8-10 times. Correct mixing of the BD Vacutainer® Heparin tube immediately after the blood sample has been taken, is extremely important to avoid microclotting.



BD Vacutainer® Heparin tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-----------------|----------|-------------|---|
| 368494 | 2 | 13x75 | Lithium Heparin | PET | Paper |  |
| 368272 | 2 | 13x75 | Lithium Heparin | PET | Transparent |  |
| 368884 | 4 | 13x75 | Lithium Heparin | PET | Paper |  |
| 368496 | 4 | 13x75 | Lithium Heparin | PET | Transparent |  |
| 368886 | 6 | 13x100 | Lithium Heparin | PET | Paper |  |
| 368889 | 6 | 13x100 | Lithium Heparin | PET | Transparent |  |
| 367526 | 10 | 16x100 | Lithium Heparin | PET | Paper |  |
| 367869 | 4 | 13x75 | Sodium Heparin | PET | Paper |  |
| 367876 | 6 | 13x100 | Sodium Heparin | PET | Paper |  |
| 368480 | 10 | 16x100 | Sodium Heparin | Glass | Paper |  |

Venous blood sampling

Plasma analysis

BD Vacutainer® PST™ II tubes

Plasma tubes with separating gel for clinical chemistry are available with spray-dried lithium heparin additives. During the centrifugation of the BD Vacutainer® PST II tubes, an inert gel separates the plasma and the cells preventing the contamination of the plasma from the separated cellular components. For example, the plasma for certain analytes such as potassium, phosphorus and glucose must be separated from the cells within a few hours - otherwise the results will be significantly distorted. Using BD PST™ II tubes, routine analytes in clinical chemistry such as potassium and glucose are still stable after a week of storage at 2-8°C. Clinical evaluations of special chemistry demonstrate a high degree of analyte stability with the gel in the BD PST™ II, with detection of >90% of the therapeutic drugs and other special analytes (proteins/peptides, steroids and vitamins) tested.

The main advantages of gel tubes versus non-gel tubes are:

- Stable barrier between plasma and cells, therefore better analyte stability
- Better sample quality
- Optimisation of the work flow: short centrifugation time, sample processing and archiving in the primary tube
- No possibility of confusion due to the use of secondary tubes

Effects of temperature

BD PST™ II should be stored at 4-25°C and protected from direct sunlight during storage. Cooling of the tube by or during centrifugation can affect the movement of the gel.



The optimum separation of sediment and plasma is achieved at a temperature of 20-25°C.

Centrifugation conditions:

1300-2000 g for 10 minutes at 18-25°C
or alternatively, according to BD study VS7513
3000 g for 5 minutes at 18-25°C

Mixing recommendation:

Plasma Separation Tubes should be gently inverted 180° and back 8-10 times. Correct mixing of the BD PST™ II tube immediately after the blood sample has been taken is extremely important to avoid microclotting.

Studies

We would be pleased to supply study documentation in relation to BD Vacutainer® PST™ II tubes on request.

BD Vacutainer® PST™ II tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---------------------|----------|-------------|---|
| 367374 | 3 | 13x75 | Lithium Heparin/Gel | PET | Paper |  |
| 368497 | 3 | 13x75 | Lithium Heparin/Gel | PET | Transparent |  |
| 367376 | 4.5 | 13x100 | Lithium Heparin/Gel | PET | Paper |  |
| 366567 | 4.5 | 13x100 | Lithium Heparin/Gel | PET | Transparent |  |
| 367378 | 8 | 16x100 | Lithium Heparin/Gel | PET | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

Venous blood sampling

Haematology

EDTA

EDTA salts (ethylene diamine tetra acetic acid) are used for the anticoagulation of whole blood for haematological investigations as the cellular components of the blood are particularly well preserved by EDTA. It works as an anticoagulant as it forms complexes with metal ions such as calcium, therefore inhibiting the coagulation cascade. Anticoagulation with EDTA is irreversible.

The EDTA concentration in BD Vacutainer® tubes is 1.8 mg per mL of complete blood when the fill level is correct, as recommended by the ICSH (International Council Society of Haematology)¹ and the CLSI (Clinical and Laboratory Standards Institute). The institutes recommend dipotassium EDTA salt (K₂EDTA) for haematological investigation. K₂EDTA is used in BD Vacutainer® Plus plastic tubes in spray dried form.

Mixing the tube

Correct mixing (8-10 inversions) of the EDTA tube immediately after the blood sample has been taken is extremely important to avoid microclotting.



BD Vacutainer® K₂EDTA tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---------------------|----------|-------------|---|
| 368841 | 2 | 13x75 | K ₂ EDTA | PET | Paper |  |
| 368274 | 2 | 13x75 | K ₂ EDTA | PET | Transparent |  |
| 362072 | 2 | 13x75 | K ₂ EDTA | PET | Paper |  |
| 368856 | 3 | 13x75 | K ₂ EDTA | PET | Paper |  |
| 368499 | 3 | 13x75 | K ₂ EDTA | PET | Transparent |  |
| 362073 | 3 | 13x75 | K ₂ EDTA | PET | Paper |  |
| 368861 | 4 | 13x75 | K ₂ EDTA | PET | Paper |  |
| 367862 | 4 | 13x75 | K ₂ EDTA | PET | Transparent |  |
| 367864 | 6 | 13x100 | K ₂ EDTA | PET | Paper |  |
| 365900 | 6 | 13x100 | K ₂ EDTA | PET | Transparent |  |
| 367525 | 10 | 16x100 | K ₂ EDTA | PET | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

1. International Council for Standardisation in Haematology and: Expert Panel on Cytometry, Recommendations of the International Council for the Standardisation in Haematology for Ethylenediamine-tetraacetic Acid Anticoagulation of Blood for Blood Cell Counting and Sizing, Am J Clin Pathol 1993;100: 371-372.

Venous blood sampling

Haematology

BD Vacutainer® K₃EDTA tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|--|----------|-------|---|
| 367836 | 2 | 13x75 | K ₃ EDTA | PET | Block |  |
| 368857 | 3 | 13x75 | K ₃ EDTA | PET | Block |  |
| 368860 | 4 | 13x75 | K ₃ EDTA | PET | Block |  |
| 361017 | 5 | 13x75 | Aprotinine (250IU)/K ₃ EDTA | Glass | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

BD Vacutainer® Crossmatch tubes

BD Vacutainer® Crossmatch tubes are available in plastic EDTA and plain clot activator tubes. The BD Vacutainer® Crossmatch tube is identified by:

- a pink cap
- large block label

Mixing recommendation:

EDTA tubes should be gently inverted 180° and back 8-10 times.

Plastic Silica tubes should be gently inverted 180° and back 5-6 times.



BD Vacutainer® Crossmatch tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-----------------------------|----------|------------|---|
| 366164 | 4 | 13x75 | K ₂ EDTA (Spray) | PET | Crossmatch |  |
| 367941 | 6 | 13x100 | K ₂ EDTA (Spray) | PET | Crossmatch |  |
| 368817 | 6 | 13x100 | Silica (Clot Act) | PET | Crossmatch |  |

All tubes are supplied in boxes of 100 / cases of 1000.

Venous blood sampling

Glucose analysis

Glucose and lactate determination

BD Vacutainer® glucose tubes are available in Sodium Fluoride, Potassium Oxalate and Sodium Fluoride EDTA.

Glucose values in unpreserved blood samples decrease quickly after collection as glucose is metabolised by the blood cells. The additives contained in BD Vacutainer® Fluoride/Oxalate and Fluoride/EDTA tubes will stop enzymatic activity at the glycolytic pathway.

HbA1c determination

One advantage of the Fluoride/EDTA tube over the Fluoride Oxalate tube is that the marker HbA1c can be determined from the same tube, so no additional tube sample needs to be taken.

Centrifugation conditions:

≤1300 g for 10 minutes at 18-25°C

Mixing recommendation:

Fluoride tubes should be gently inverted 180° and back 8-10 times.



BD Vacutainer® tubes for glucose and lactate determination

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---|----------|-------|---|
| 368920 | 2 | 13x75 | Fluoride (2.5mg/mL)/ Oxalate (2mg/mL) | PET | Paper |  |
| 368921 | 4 | 13x75 | Fluoride (2.5mg/mL)/ Oxalate (2mg/mL) | PET | Paper |  |
| 368201 | 5 | 13X100 | Fluoride (2.5mg/mL)/ Oxalate (2mg/mL) | PET | Paper |  |
| 368520 | 2 | 13x75 | Fluoride (1.5mg/mL)/ EDTA (3mg/mL) | PET | Block |  |
| 368521 | 4 | 13x75 | Fluoride (1.5mg/mL)/ EDTA (3mg/mL) | PET | Block |  |
| 367764 | 5 | 13x75 | Sodium Fluoride (4mg/mL)/ Sodium Heparin (28IU/mL) | Glass | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

Venous blood sampling

Special analysis

BD Seditainer™ System (sealed manual BSG)

The BD Seditainer™ tubes are designed for blood sedimentation without the use of sedimentation pipettes. The blood is taken directly into the BD Seditainer™ tubes and turned end-over-end 8-10 times. Immediately before the tubes are placed in the BD Seditainer™ stand for measurement, the tubes must be mixed again. After one or two hours the results are read. The BD Seditainer™ stand holds a maximum of 10 BD Seditainer™ tubes and has a height adjustable zero mark. The measurement results achieved correspond to the Westergren method.



Mixing recommendation:

ESR (Erythrocyte Sedimentation Rate) tubes should be gently inverted 180° and back 8-10 times.

BD Vacutainer® Manual ESR tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-------------------------|----------|-------|---|
| 367740 | 1.6 | 13x75 | Sodium Citrate (0.129M) | Glass | Paper |  |

BD Vacutainer® Seditainer™ tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-------------------------|----------|-------|---|
| 366674 | 5 | 10.25x120 | Sodium Citrate (0.105M) | Glass | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

BD Vacutainer® Seditainer™ Manual ESR stand

| Cat No. | Description | Unit of sales |
|---------|---------------------------------|---------------|
| 366016 | BD Seditainer™ Manual ESR Stand | 1 |



Clinical instrumentation

Automated ESR solutions for maximum clinical performance

Helping improve clinical outcomes

The BD Sedi-20 and BD Sedi-40, in combination with the tube technology of the BD Seditainer™, provide an automated solution to help improve clinical outcomes by standardising Erythrocyte Sedimentation Rate (ESR) determinations. This results in more accurate, timely results, a more efficient workflow – and helps improve patient care.

Improved Efficiency

- 30 minute analysis time – half the time of a 1 hour modified Westergren

Quality Results

- Standardised analysis utilising the established BD Seditainer™ tubes
- Clinical equivalence to the gold standard Westergren¹, incorporating temperature correction²

1. BD White Paper VS9114. An Evaluation of Erythrocyte Sedimentation Rate Determination using BD Sedi 20 and BD Sedi 40 in Comparison to the Westergren Method

2. Manley, RW. The effect of room temperature on erythrocyte sedimentation rate and its corrections. Journal of Clinical Pathology, 1957, 10, 354



Enhanced User Safety

- The BD Sedi-20 and BD Sedi-40, in combination with the BD Seditainer™ tubes (Cat. No. 366676), deliver a closed system for enhanced user safety by reducing exposure to hazardous materials

Additional features of the BD Sedi-40

- On board QC management
- Integrated barcode reader for fast, accurate sample ID entry
- Integrated tube mixing
- Integrated printer
- Connectivity capabilities for automatic data transmission

BD Sedi-20 and BD Sedi-40 instruments

| Cat No. | Description | Unit of sales |
|---------|---------------------------------|---------------|
| 361545 | BD Sedi-20 instrument | 1 |
| 361546 | BD Sedi-40 instrument | 1 |
| 361547 | Duo-Mix™ Mixer | 1 |
| 361548 | Barcode Reader - BD Sedi-20/-40 | 1 |
| 361549 | Printer BD Sedi-20/-40 | 1 |
| 361550 | Printer Paper BD Sedi-20/-40 | 5 |

Duo-Mix is a trademark of Vital Diagnostics.

BD Vacutainer® Seditainer™ tubes for use with the Sedi-20 and Sedi-40 systems

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-------------------------|----------|-------|---|
| 366676 | 1.8 | 8x100 | Sodium Citrate (0.105M) | Glass | Paper |  |

Venous blood sampling

Special analysis

Trace element determination

BD Vacutainer® tubes for the analysis of trace elements contain only minimal amounts of trace elements. Maximum concentrations were defined for the trace elements antimony, arsenic, lead, chromium, iron, cadmium, calcium, copper, magnesium, manganese, mercury, selenium and zinc that could be extracted by blood from the tube itself or the stopper.

Every production batch is checked and only released if the given maximum value is not exceeded. The values given take into account the use of a standard BD needle.

Mixing recommendation:

Trace Element tubes should be gently inverted 180° and back 8-10 times.

| Analyte | Glass µg/l | PET µg/l | Analyte | Glass µg/l | PET µg/l |
|----------|------------|----------|------------|------------|----------|
| Antimony | 0.8 | - | Copper | 8.0 | 5.0 |
| Arsenic | 1.0 | 0.2 | Magnesium* | 60 | 40 |
| Lead | 2.5 | 0.3 | Manganese | 1.5 | 1.5 |
| Chromium | 0.9 | 0.5 | Mercury** | - | 3.0 |
| Iron | 60 | 25 | Selenium | - | 0.6 |
| Cadmium | 0.6 | 0.1 | Zinc* | 40 | 40 |
| Calcium* | 400 | 150 | | | |

The maximum values were determined by aqueous extraction of the sealed tube by atomic absorption spectrometry (AAS).

* Determined using heat, **Cold vapour, remainder without heat

BD Vacutainer® tubes for trace element determination

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-------------------------|----------|-------|---|
| 368380 | 6 | 13x100 | Silica (Clot Activator) | PET | Paper |  |
| 368381 | 6 | 13x100 | K ₂ EDTA | PET | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

Blood group determination

The anticoagulant ACD (Acid Citrate Dextrose/Glucose) is used for the conservation of erythrocytes. ACD exists in two forms: Solutions A and B, each with different mixture ratios.

| | ACD solution A | ACD solution B |
|-------------------------|----------------|----------------|
| Na ₃ citrate | 3.3 mg/mL | 1.89 mg/mL |
| Citric acid | 1.2 mg/mL | 0.69 mg/mL |
| Dextrose | 3.68 mg/mL | 2.1 mg/mL |
| Potassium sorbate | 0.03 mg/mL | 0.03 mg/mL |

The figures represent the final concentration in the blood in each case.

Mixing recommendation:

ACD tubes should be gently inverted 180° and back 8-10 times.



BD Vacutainer® tubes for blood group determination

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|----------------|----------|-------|---|
| 367756 | 6 | 13x100 | ACD Solution B | Glass | Paper |  |
| 366645 | 8.5 | 16x100 | ACD Solution A | Glass | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

Cell and biomarker preservation

BD CPT™ blood collection tubes

BD CPT™ system (Cell Preparation Tube)

The BD CPT™ tube provides a single-step, standardised method for the isolation of Peripheral Blood Mononuclear Cells (PBMCs) - lymphocytes and monocytes from whole blood. In a single process step, up to 15million PBMCs can be isolated within 20 minutes. The BD CPT™ tube enables:

- Improved sample preparation yield and consistency
 - Standardises process when compared to manual FICOLL™ gradient separations
 - Improves reproducibility between sample preparations and technical operators
- Faster separations
 - No need to prepare FICOLL™ gradients
 - Decreased processing time with less manipulation of the sample
- Safe isolation of cells
 - Reduces risk of cellular contamination with the cells enclosed in the sterile BD Vacutainer® tube

The BD CPT™ tube is CE marked for in vitro diagnostic use.

Studies

We would be pleased to supply support documentation or literature on request.



Centrifuging conditions:

1500-1800 g for 20 minutes at 18-25°C

Mixing recommendation:

Cell Preparation Tubes should be gently inverted 180° and back 8-10 times.

BD Vacutainer® CPT™ tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---------------------------|----------|-------------|---|
| 362781 | 4 | 13x100 | Sodium Citrate/ FICOLL | Glass | Transparent |  |
| 362782 | 8 | 16x125 | Sodium Citrate/ FICOLL | Glass | Transparent |  |
| 362780 | 8 | 16x125 | Sodium Heparin/ FICOLL | Glass | Transparent |  |

FICOLL is a registered trademark of GE Healthcare Companies.

All tubes are supplied in boxes of 60.

Cell and biomarker preservation

BD PPT™ blood collection tubes

BD PPT™ system (Plasma Preparation Tube)

The BD PPT™ tube is used for the separation of undiluted plasma from whole blood for molecular diagnostic test methods. These methods include, but are not limited to, Polymerase chain reaction (PCR) or branched DNA (bDNA) amplification techniques. The BD PPT™ tube is also applicable to other MDx analysis where an undiluted plasma specimen is required. The BD PPT™ tube ensures:

- Safe handling of infectious samples
The user is not exposed to biohazardous material enclosed in the BD Vacutainer® tube. Plasma is prepared in the closed BD Vacutainer® tubes that can be directly transported, eliminating the need for aliquoting from primary BD Vacutainer® tube to secondary container and re-labelling. No user exposure to biohazard samples.
- Plasma quality is maintained
The gel barrier prevents plasma from coming in contact with red blood cells to maintain stability of the plasma. Viral load will be stable for:
 - 6 hours - whole blood at room temperature¹
 - 24 hours - separated plasma at room temperature
 - 5 days - separated plasma refrigerated at 4°C

Plasma may be stored frozen in situ in the BD PPT™ tube. However, freezing plasma in situ in BD PPT™ tubes may be prohibited for some assays and the assay manufacturer's guidelines should be consulted.

The BD PPT™ tube is CE marked and FDA 510K cleared for in vitro diagnostic use.



Studies

We would be pleased to supply support documentation or literature on request.

Centrifuging conditions:

1100 g for 10 minutes at 18-25°C

Mixing recommendation:

Plasma Preparation Tubes should be gently inverted 180° and back 8-10 times.

BD Vacutainer® PPT™ tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|-------------------------|----------|-------------|---|
| 362795 | 5 | 13x100 | K ₂ EDTA/Gel | PET | Transparent |  |
| 362799 | 8.5 | 16x100 | K ₂ EDTA/Gel | PET | Transparent |  |

All tubes are supplied in boxes of 100.

1. Valid using the Roche Ampliprep/COBAS® Taqman® HIV-1 test kit.

Cell and biomarker preservation

PAXgene® Blood RNA System

PAXgene® Blood RNA System

The PAXgene® Blood RNA system consists of the PAXgene® Blood RNA tube distributed by BD and PAXgene™ Blood RNA kit available from QIAGEN.

The PAXgene® Blood RNA tube contains a proprietary reagent that immediately stabilizes all total RNA, including miRNA. The PAXgene® RNA tube ensures:

- Standardized collection and immediate stabilisation of intracellular RNA in whole blood. The intracellular RNA will be stable for:
 - 3 days – whole blood at room temperature (18-25°C)
 - 5 days - whole blood refrigerated (2-8°C)
 - 60 months – whole blood frozen (-20 and -70°C)
- Stabilises miRNA
The PAXgene® Blood miRNA Kit, for manual or automatic purification of miRNA after blood collection with a PAXgene® Blood RNA tube, is available from QIAGEN
- Minimises ex vivo blood RNA degradation or gene induction
- Enables accurate detection and quantitation of gene transcripts (when used in conjunction with PAXgene® Blood RNA Kit).
- Enables clinical trials worldwide without compromising sample quality.



The PAXgene® Blood RNA system is CE marked and FDA 510K cleared for in vitro diagnostic use.

Studies

We would be pleased to supply support documentation or literature on request.

For more information please visit www.PreAnalytiX.com.

PAXgene™ Blood RNA tube

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|--|----------|-------|---------|
| 762165 | 2.5 | 16x100 | Proprietary RNA stabilisation additive (6.9mL) | PET | Paper | |

PAXgene and PreAnalytiX are trademarks of PreAnalytiX GmbH.

Case of 100 tubes.

Cell and biomarker preservation

PAXgene™ Blood DNA System

PAXgene® Blood DNA System

The PAXgene® Blood DNA Tube (IVD) is a development of PreAnalytiX, the joint venture between QIAGEN and BD. The performance of the PAXgene® Blood DNA Tube has been verified with automated and manual DNA isolation kits available from QIAGEN using magnetic bead, silica membrane and precipitation technologies.

The PAXgene® Blood DNA Tube contains a proprietary EDTA formulation that immediately stabilises intracellular DNA. The PAXgene® Blood DNA Tube ensures sufficient DNA quantity and quality for molecular diagnostic assays that require DNA from whole blood.

Documented DNA stability and performance data.

DNA samples purified from the 2.5mL draw volume tube will have a purity (A_{260}/A_{280}) of 1.7-1.9 and a DNA concentration of > 12.5ng DNA/ μ l eluate for 95% of samples and ensure DNA stability after blood collection for:

14 days at room temperature (18-25°C)

28 days refrigerated (2-8°C)

3 days at 35°C

Increased traceability

The PAXgene® Blood DNA Tube (IVD) has human readable and bar-coded information on the label. Each tube has a unique identification code that can be associated to the patient blood specimen, which can potentially avoid expensive tube labelling.

PAXgene® Blood DNA tube

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---------------------|----------|-------|---|
| 761165 | 2.5 | 13x75 | K ₂ EDTA | PET | Paper |  |

PAXgene and PreAnalytiX are trademarks of PreAnalytiX GmbH.

Case of 100 tubes.



Complete solution for all laboratory sample throughputs

The world leaders in blood biomolecular stabilisation and isolation of DNA can provide a complete workflow solution optimised to your laboratory.

The PAXgene® Blood DNA Tube (IVD) is CE marked for in vitro diagnostic use.

Cell and biomarker preservation

BD™ P100 for stabilising proteins

BD™ P100 system (Plasma Protein Preservation tube)

The BD™ P100 tube is a plasma protein preservation tube that contains a broad spectrum protease inhibitor cocktail optimised for human blood. The BD™ P100 tube also features a novel mechanical separator which provides high quality plasma suitable for many downstream protein analysis platforms including mass spectrometry and immunoassays.

The blend of broad spectrum proteases inhibitors in the BD™ P100 tube has been specifically developed and optimised for human plasma to ensure the broadest range of plasma proteins are stabilised.

The BD™ P100 tube differs from standard blood collection tubes by incorporating a novel mechanical separator. This innovative separator provides a solid barrier between plasma and cellular material, ensuring a significant reduction in cellular contamination to further increase the stability of the plasma proteins.

Centrifugation:

For best sample quality the centrifugation of the BD™ P100 tube should be performed as soon as possible after the blood sample has been collected.

Optimum centrifugation conditions:

2500 g for 20 min.

(Swing-out rotor or fixed rotor with 45° angle)

If 2500 g cannot be achieved:

1600 g for 30 min. or

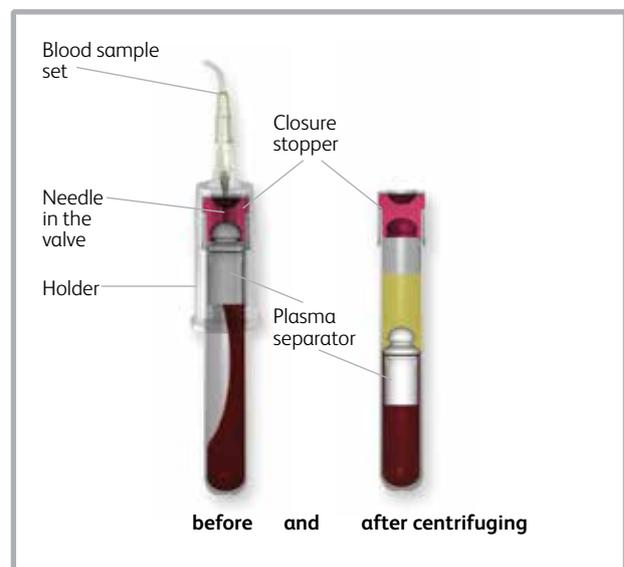
1100 g for 30 min.

For research use only. Not for use in diagnostic procedures. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.

Studies

We would be pleased to supply support documentation or literature on request.

Mechanical plasma separator



BD™ P100 tube

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|--|----------|-------|---|
| 366448 | 8.5 | 16x100 | Broad spectrum protease inhibitor cocktail | PET | Paper |  |

Kit contains 24 tubes.



Cell and biomarker preservation

BD™ P700 and BD™ P800

BD™ P700 system (Plasma GLP-1 Preservation tube)

The BD™ P700 tube is a plasma protein preservation tube that contains a proprietary dipeptidyl peptidase IV (DPP-IV) inhibitor that immediately solubilises during blood collection. The BD™ P700 tube provides protection and preservation of Glucagon Like Peptide I (GLP-1). GLP-1 is a peptide associated with metabolic diseases, such as Type II Diabetes. GLP-1 is a target of the DPP-IV enzyme and thus quantitation of GLP-1 in plasma is not reliable without the use of a DPP-IV inhibitor.

For research use only. Not for use in diagnostic procedures. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.



BD™ P700 tube

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|--|----------|-------|---|
| 366473 | 3 | 13x75 | 5.4mg K ₂ EDTA/Proprietary DPP-IV Inhibitor | PET | Paper |  |

10 tubes per foil pouch, 2 foil pouches per kit

BD™ P800 system (Plasma GLP-1, GIP, Glucagon & Ghrelin Preservation Tube)

The BD™ P800 tube is a plasma protein preservation tube that contains a proprietary cocktail of protease, esterase and dipeptidyl peptidase IV (DPP-IV) inhibitors that immediately solubilises during blood collection. The BD™ P800 tube provides preservation of the Incretin peptides released during feeding - Glucagon Like Peptide I (GLP-1), Gastric Inhibitory Peptide (GIP), Glucagon and Ghrelin. The Incretin peptides are associated with metabolic diseases, such as Type II Diabetes and obesity.

Centrifuging conditions:

2mL tubes: 1100 - 1300 g for 10 min

8.5mL tubes: 1100 - 1300 g for 20 min

Stability

The stability of the peptides in BD™ P800 tubes in comparison to BD Vacutainer® EDTA tubes for routine measurements is set out in the following table:

| Peptides | T ½ EDTA (h) | T ½ P800 (h) |
|--------------|--------------|--------------|
| GLP-1 (7-37) | 4-8 | > 96 |
| GLP-1 (7-37) | 5-23 | > 96 |
| GIP (1-42) | ~ 5 | > 96 |
| Ghrelin | ~ 15 | > 48-72 |
| Glucagon | ~ 5-15 | > 48 |

For research use only. Not for use in diagnostic procedures. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.



BD™ P800 tubes

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|--|----------|-------|---|
| 366420 | 2 | 13x75 | 3.6mg K ₂ EDTA/Protease, Esterase & DPP-IV Inhibitor | PET | Paper |  |
| 366421 | 8.5 | 16x100 | 15.3mg K ₂ EDTA/Protease, Esterase & DPP-IV Inhibitor | PET | Paper |  |

Case of 100 tubes.

Blood culture systems (BD Diagnostics - Diagnostic Systems)

BD BACTEC™ Media

BD Diagnostics, a leader in blood collection and blood culture for more than 40 years, offers clinicians and microbiology laboratories a unique unmatched range of solutions providing:

- Safe specimen collection and transport
- Compatible, high-performing diagnostic systems
- Tools for active and real-time reporting
- High-quality trainings and support

Please contact your local BD office for more details or find more information on <http://www.bd.com/europe/ds/>



BD BACTEC™ Media

| Cat No. | Specification | Unit of sales |
|---------|--|---------------|
| 442260 | BD BACTEC™ - Standard/10 Aerobic/F Medium | 50 vials |
| 442192 | BD BACTEC™ PLUS - Aerobic/F Medium | 50 vials |
| 442191 | BD BACTEC™ - Standard Anaerobic/F Medium | 50 vials |
| 442193 | BD BACTEC™ PLUS - Anaerobic/F Medium | 50 vials |
| 442265 | BD BACTEC™ - Lytic/10 Anaerobic/F Medium | 50 vials |
| 442194 | BD BACTEC™ - BD Peds Plus™ Medium | 50 vials |
| 442003 | BD BACTEC™ - Myco/F Lytic Medium | 25 vials |
| 442026 | BD BACTEC™ - Mycosis IC/F Medium Culture Vials | 25 vials |
| 442206 | BD BACTEC™ - Mycosis IC/F Medium Culture Vials | 50 vials |
| 257283 | BD BACTEC™ PLUS Aerobic / Anaerobic Twinset | 25 sets |

Blood culture systems (BD Diagnostics - Diagnostic Systems)

BD BACTEC™ Plastic Bottles

The latest addition to the BD BACTEC™ range. New Plastic Blood Culture Bottles increase lab convenience while maintaining high quality standards.

- FDA clearance for 442023 BD BACTEC™ Plus Aerobic bottles obtained July 2012
- Provides the convenience of plastic without compromising clinical performance

- Can be used with BACTEC™ 9000 and BACTEC™ FX
- Plastic and glass bottles can be used in the same instrument
- Ready to use after a software update

Contact your BD Sales Representative today for more details.



BD BACTEC™ Plastic Bottles

| Cat No. | Specification | Unit of sales |
|---------|---|---------------|
| 442023 | BD BACTEC™ Bottle Plastic Plus Aerobic Medium | 50 vials |
| 442022 | BD BACTEC™ Bottle Plastic Plus PRIME Aerobic Medium | 50 vials |
| 442021 | BD BACTEC™ Bottle Plastic Lytic Anaerobic Medium | 50 vials |
| 442020 | BD BACTEC™ Bottle Plastic PEDS Plus PRIME Medium | 50 vials |

Blood culture systems (BD Diagnostics - Diagnostic Systems)

BD BACTEC™ Bottles compatible with BD Vacutainer® Blood collection systems

As the worldwide leader in safety-engineered medical devices, BD has designed its BD BACTEC™ blood culture bottles to be fully compatible with the widely available BD Vacutainer® safety blood collection systems – **thus reducing the risk of contaminations and accidental needle-stick injuries during blood collection and sub-culturing.**

For more information on the BD Vacutainer® Push Button and Safety-Lok™ blood collection sets, BD Vacutainer® holders and blood transfer device, please go to pages 41-44 in this catalogue.



Specimen collection and transport system (BD Diagnostics - Diagnostic Systems)

BD™ ESwab™

BD™ ESwab™ Collection and Transport System is intended for the collection and transport of clinical specimens containing aerobes, anaerobes and fastidious bacteria from the collection site to the testing laboratory. In the laboratory, ESwab specimens are processed using standard clinical laboratory operating procedures for bacterial culture.



BD ESwab™

| Cat No. | Specification | Description | Unit of sales |
|---------|--|---|---------------|
| 220245 | BD™ ESwab™ Regular Collection Kit | White polypropylene screw-cap tube filled with 1 mL of Liquid Amies Medium and one regular size flocced applicator swab. | 50 |
| 220246 | BD™ ESwab™ Minitip Collection Kit | Green polypropylene screw-cap tube filled with 1 mL of Liquid Amies Medium and one minitip flocced applicator swab. | 50 |
| 220532 | BD™ ESwab™ Flexible Minitip Collection Kit | Blue polypropylene screw-cap tube filled with 1 mL of Liquid Amies Medium and one flexible minitip flocced applicator swab. | 50 |

Blood collection needles

BD Vacutainer® Eclipse™ Signal™ blood collection needle

BD Vacutainer® Eclipse™ Signal™ offers a combination of proven robust safety technology with the additional benefit of improved in-vein confirmation (speed and visibility of flash) resulting in ease of use and confidence during venous blood collection. It also minimises the risk of needle stick injuries during blood collection, thereby increasing both healthcare worker and patient safety.

BD Vacutainer® Eclipse™ Signal™ has the fastest flow among BD straight needles.



BD Vacutainer® Eclipse™ Signal™ blood collection needles

| Cat No. | Size | Length | Colour code | Unit of sales |
|---------|-------------|-----------|--|---------------|
| 368837 | 21G (0.8mm) | 1" (25mm) |  | 500 (10x50) |
| 368838 | 22G (0.7mm) | 1" (25mm) |  | 500 (10x50) |

BD Vacutainer® Eclipse™ Signal™ blood collection needles with integrated holder



| Cat No. | Size | Length | Colour code | Unit of sales |
|---------|-------------|-----------|---|---------------|
| 368835 | 21G (0.8mm) | 1" (25mm) |  | 400 (8x50) |
| 368836 | 22G (0.7mm) | 1" (25mm) |  | 400 (8x50) |

Blood collection needles

BD Vacutainer® Eclipse™ blood collection needle

The BD Vacutainer® Eclipse™ needle for venous blood sampling has a fully integrated safety shield over the needle, which once activated protects against needle stick injuries. This safety shield is an integral part of the needle and its orientation corresponds to the needle bevel. This ensures safe and simple taking of the blood sample. The safety mechanism is designed for single handed activation. The fully integrated safety shield engages over the needle with an audible click, irreversibly locking with a triple closure mechanism.



BD Vacutainer® Eclipse™ blood collection needles

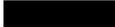
| Cat No. | Size | Needle length | Colour code | Unit of sales |
|---------|-------------|---------------|---|---------------|
| 368609 | 21G (0.8mm) | 1.25" (32mm) |  | 480 (10x48) |
| 368610 | 22G (0.7mm) | 1.25" (32mm) |  | 480 (10x48) |

BD Vacutainer® Eclipse™ blood collection needle with pre-attached holder

With this pre-attached safety needle, the holder is already fitted, so it is not necessary to manually assemble the needle and holder. This ready-for-use blood sample needle and holder is supplied individually in sterile blister packaging.



BD Vacutainer® Eclipse™ needles with pre-attached holder

| Cat No. | Size | Needle length | Colour code | Unit of sales |
|---------|-------------|---------------|---|---------------|
| 368650 | 21G (0.8mm) | 1.25" (32mm) |  | 100 |
| 368651 | 22G (0.7mm) | 1.25" (32mm) |  | 100 |

Conventional blood collection needles

BD Vacutainer® PrecisionGlide™ multi-sample needle

BD Vacutainer® PrecisionGlide™ needles can be used for multiple tube samples. BD Vacutainer® PrecisionGlide™ needles have an advanced low angle bevel design and are coated with sili-

cone, a low friction lubricant, ensuring very gentle and smooth vein entry. Individual laser quality control maintains the highest quality levels. BD Vacutainer® PrecisionGlide™ needles are available with a 20, 21 or 22 gauge needle.

BD Vacutainer® PrecisionGlide™ multi-sample needles

| Cat No. | Size | Length | Colour code | Unit of sales |
|---------|-------------|-------------|-------------|---------------|
| 360210 | 22G (0.7mm) | 1" (25mm) | Black | 1000 (10x100) |
| 360211 | 22G (0.7mm) | 1.5" (38mm) | Black | 1000 (10x100) |
| 360212 | 21G (0.8mm) | 1" (25mm) | Green | 1000 (10x100) |
| 360213 | 21G (0.8mm) | 1.5" (38mm) | Green | 1000 (10x100) |
| 360214 | 20G (0.9mm) | 1" (25mm) | Yellow | 1000 (10x100) |
| 360215 | 20G (0.9mm) | 1.5" (38mm) | Yellow | 1000 (10x100) |



Blood collection sets

BD Vacutainer® UltraTouch™ Push Button blood collection set

NEW

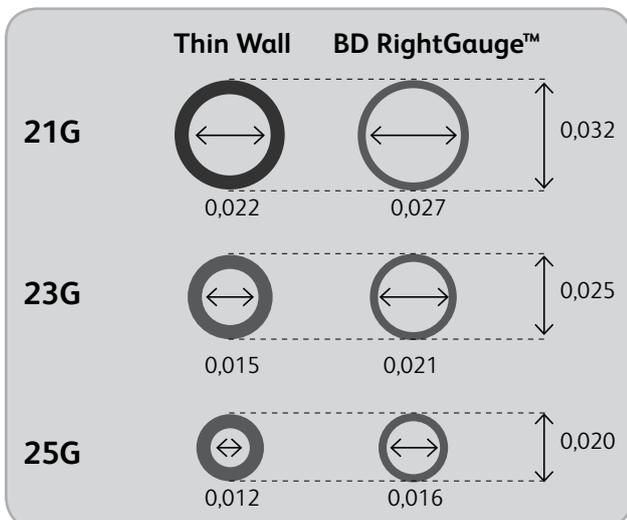
Engineered to minimize patient discomfort during blood collection with PentaPoint™ Comfort and RightGauge™ ultra-thin wall technology.

- Reduces accidental needlestick up to 88%
Single-handed, in-vein safety activation instantly retracts needle after use
- Greater patient comfort
PentaPoint™ bevel requires 32% less penetration force
- Improved venepuncture
Ultra-thin RightGauge™ cannula allows the use of a smaller gauge suitable for more veins, without compromising filling times or sample quality



NEW BD Vacutainer® UltraTouch™ Push Button blood collection sets with luer adapter

| Cat No. | Size | Needle length | Tubing length | Luer adapter | Colour code | Unit of sales |
|---------|-------------|---------------|---------------|--------------|---|---------------|
| 367393 | 21G (0.8mm) | 0.75" (19mm) | 7" (178mm) | With |  | 200 (4x50) |
| 367365 | 21G (0.8mm) | 0.75" (19mm) | 12" (305mm) | With |  | 200 (4x50) |
| 367392 | 23G (0.6mm) | 0.75" (19mm) | 7" (178mm) | With |  | 200 (4x50) |
| 367364 | 23G (0.6mm) | 0.75" (19mm) | 12" (305mm) | With |  | 200 (4x50) |
| 367391 | 25G (0.5mm) | 0.75" (19mm) | 7" (178mm) | With |  | 200 (4x50) |
| 367363 | 25G (0.5mm) | 0.75" (19mm) | 12" (305mm) | With |  | 200 (4x50) |



All dimensions shown are nominal values and in inches.

Blood collection sets

BD Vacutainer® Push Button blood collection set

The BD Vacutainer® Push Button blood collection set with in-vein activation offers split-second protection for that single moment which could potentially change your life. The push-button safety mechanism instantly helps protect you against needle stick injury.

- Protection against needle injuries:
On pressing the button, the needle is withdrawn straight from the vein and disappears permanently inside the housing of the blood collection set. This provides an extremely high level of protection against needle injuries.

- Single hand activation possible:
The activation of the safety mechanism with a single hand allows greater attention to be paid to the patient and the venepuncture site.
- Indication of successful venepuncture:
When the vein has been penetrated, blood flows immediately into the inspection chamber.
- Versatile:
For taking blood samples and for short-term infusions of up to two hours.



BD Vacutainer® Push Button blood collection sets without luer adapter

| Cat No. | Size | Needle length | Tubing length | Luer adapter | Colour code | Unit of sales |
|---------|-------------|---------------|---------------|--------------|---|---------------|
| 367326 | 21G (0.8mm) | 0.75" (19mm) | 12" (305mm) | None |  | 200 (4x50) |
| 367324 | 23G (0.6mm) | 0.75" (19mm) | 12" (305mm) | None |  | 200 (4x50) |
| 367323 | 25G (0.5mm) | 0.75" (19mm) | 12" (305mm) | None |  | 200 (4x50) |

BD Vacutainer® Push Button blood collection set with pre-attached holder

With the pre-attached products, the holder is already fitted, so it is not necessary to manually assemble the needle and holder. The sterile closed system comes individually blister packed to minimise the risk of contamination of blood cultures. It is ideally suited for the taking of samples using the BD Bactec™ blood culture bottles.

BD Vacutainer® Push Button blood collection sets with pre-attached holder

| Cat No. | Size | Needle length | Tubing length | Colour code | Unit of sales |
|---------|-------------|---------------|---------------|---|---------------|
| 367355 | 21G (0.8mm) | 0.75" (19mm) | 7" (178mm) |  | 100 (5x20) |
| 368657 | 21G (0.8mm) | 0.75" (19mm) | 12" (305mm) |  | 100 (5x20) |
| 367354 | 23G (0.6mm) | 0.75" (19mm) | 7" (178mm) |  | 100 (5x20) |
| 368658 | 23G (0.6mm) | 0.75" (19mm) | 12" (305mm) |  | 100 (5x20) |



Blood collection sets

BD Vacutainer® Safety-Lok™ blood collection set

BD Vacutainer® Safety-Lok™ blood collection sets are sterile closed systems for venous blood collection. The safety mechanism is designed to help prevent needle stick injuries.

- Protection against needle injuries:
Following successful venepuncture, the integrated safety shield is pushed over the needle, surrounding it completely. It engages irreversibly with an audible click over the needle.
- Single hand activation possible:
The activation of the safety mechanism with a single hand allows greater attention to be paid to the patient and the venepuncture site.

- Versatile:
For taking blood samples and for short-term infusions of up to two hours.



BD Vacutainer® Safety-Lok™ blood collection sets without luer adapter

| Cat No. | Size | Needle length | Tubing length | Luer adapter | Colour code | Unit of sales |
|---------|-------------|---------------|---------------|--------------|---|---------------|
| 367246 | 21G (0.8mm) | 0.75" (19mm) | 12" (305mm) | None |  | 200 (4x50) |
| 367247 | 23G (0.6mm) | 0.75" (19mm) | 12" (305mm) | None |  | 200 (4x50) |
| 368383 | 25G (0.5mm) | 0.75" (19mm) | 12" (305mm) | None |  | 200 (4x50) |



BD Vacutainer® Safety-Lok™ blood collection sets with luer adapter

| Cat No. | Size | Needle length | Tubing length | Luer adapter | Colour code | Unit of sales |
|---------|-------------|---------------|---------------|--------------|---|---------------|
| 367282 | 21G (0.8mm) | 0.75" (19mm) | 7" (178mm) | With |  | 200 (4x50) |
| 367286 | 21G (0.8mm) | 0.75" (19mm) | 12" (305mm) | With |  | 200 (4x50) |
| 367284 | 23G (0.6mm) | 0.75" (19mm) | 7" (178mm) | With |  | 200 (4x50) |
| 367288 | 23G (0.6mm) | 0.75" (19mm) | 12" (305mm) | With |  | 200 (4x50) |
| 367295 | 25G (0.5mm) | 0.75" (19mm) | 7" (178mm) | With |  | 200 (4x50) |

Blood collection sets

BD Vacutainer® Safety-Lok™ blood collection set with pre-attached holder

With the pre-attached products, the holder is already fitted, so it is not necessary to manually assemble the needle and holder. The sterile closed system comes individually blister packed to minimise the risk of contamination of blood cultures. It is ideally suited for the taking of samples using the BD Bactec™ blood culture bottles.



BD Vacutainer® Safety-Lok™ blood collection sets with pre-attached holder

| Cat No. | Size | Needle length | Tubing length | Colour code | Unit of sales |
|---------|-------------|---------------|---------------|-------------|---------------|
| 368654 | 21G (0.8mm) | 0.75" (19mm) | 7" (178mm) | Green | 200 (8x25) |
| 368652 | 21G (0.8mm) | 0.75" (19mm) | 12" (305mm) | Green | 200 (8x25) |
| 368655 | 23G (0.6mm) | 0.75" (19mm) | 7" (178mm) | Blue | 200 (8x25) |
| 368653 | 23G (0.6mm) | 0.75" (19mm) | 12" (305mm) | Blue | 200 (8x25) |

Adapters and holders

BD Vacutainer® single use holder, BD luer adapter and adapters with pre-attached holders

1 BD Vacutainer® Luer adapter (Cat. No. 367300) is a sterile device with a multi-sampling valve and is designed for use with a catheter to collect blood with BD Vacutainer® blood collection tubes. The device is ideal for use with any female luer fitting.

2 BD Vacutainer® single-use holders (Cat. No. 364815) are compatible with all BD Vacutainer® tubes and needles, including BD Eclipse™ safety needles, BD Safety-Lok™ blood collection sets and BD Push Button blood collection sets. BD Vacutainer® single-use holders are also compatible with BD BACTEC™ blood culture bottles.

3 The BD Vacutainer® Luer-Lok™ Access Device (Cat. No. 364902) is a preassembled multisample BD Luer-Lok™ and holder which is compatible with female luer connections or IV ports designed for luer access and has a blue colour-coded connection to provide easy differentiation from other holder based-products.



4 The BD Vacutainer® Blood Transfer Device (Cat. No. 364810) is a pre-assembled and easy-to-use device designed with safety in mind. It is used for needleless specimen transfer from a syringe to an evacuated tube or blood culture bottle and has a red colour-coded connection to provide easy differentiation from other holder based products.

BD Vacutainer® Luer adapter

| Cat No. | Description | Colour code | Unit of sales |
|---------|---|---|---------------|
| 367300 | Luer extension for taking blood samples from catheters and perfusion sets |  | 1000 (10x100) |

BD Vacutainer® Luer adapters with pre-attached holders

These single use products are ready-to-use, sterile, individually blister packaged holders, with the Luer adapter ready fitted.

| Cat No. | Description | Colour code | Unit of sales |
|---------|--|---|---------------|
| 364902 | BD Vacutainer® Luer-Lok™ Access Device ("male Luer") |  | 200 (2x100) |
| 364810 | BD Vacutainer® Blood Transfer Device ("female Luer") |  | 200 (2x100) |

BD Vacutainer® holders

| Cat No. | Description | Colour code | Unit of sales |
|---------|---|---|---------------|
| 364815 | BD Vacutainer® single use plastic holder for tubes with 13mm and 16mm diameter and for BD Bactec™ blood culture bottles |  | 1000 (4x250) |
| 368872 | BD Pronto™ Quick Release holder for tubes with 13mm and 16mm diameter and for BD Bactec™ blood culture bottles |  | 100 (5x20) |
| 364879 | BD Vacutainer® Multiple use plastic holder for tubes with 13mm and 16mm diameter and for BD Bactec™ blood culture bottles |  | 1000 (4x250) |

Capillary blood sampling

BD Microtainer® MAP tube

Process optimisation for capillary blood samples

The BD Microtainer® MAP tube for automated processing enables efficient and effective work, both on the ward and in the laboratory.

- The first capillary blood tube with standard dimensions (13 x 75mm) and penetrable closure.
- Compatible with haematology analysers without the need for a tube adapter.
- Three clearly visible fill markings ensure the correct sample volume (250-500µl).
- Easy to open with twist locking mechanism that ensures no leakage.
- The tube can have a standard label attached directly, minimising the risk of confusion due to missing or incomplete labelling is eliminated.
- Colour marking for identification of the type of sample and the correct positioning of the patient label.

BD Microtainer® MAP tube

| Cat No. | Description | Closure | Closure | Unit of sales |
|---------|--|------------|---|---------------|
| 363706 | EDTA tube for blood profile analysis with 1.0 mg K ₂ EDTA, dimensions 13 x 75mm | Microgard™ |  | 200 (4x50) |



Capillary blood sampling

BD Microtainer® tubes

BD Microtainer®

BD Microtainer® tubes are for taking samples, transport and processing of capillary or venous blood from infants, children, geriatrics and emergency patients, whenever only the smallest amounts of blood are required.

In order to ensure tube identification, the tubes are marked with the colour code that corresponds to the venous blood collection tubes. There are fill marks on the tubes that ensure the correct blood to anticoagulant ratio.

BD Microgard™ closure

The special design of the BD Microgard™ safety closure substantially reduces blood splashing after the tube has been opened.

A larger diameter facilitates handling of the tube.

In combination with a tube extender, the BD Microtainer® tubes with Microgard™ closure fit into 13 x 75mm racks.

Centrifugation conditions:

6000-15000g for 90 seconds for gel tubes
Minimum 2000g for 3 minutes for non-gel tubes

Mixing recommendation:

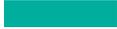
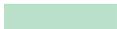
BD Microtainer® EDTA and glucose tubes should be gently inverted 180° and back 5 times.

BD Microtainer® plasma tubes should be gently inverted 180° and back 8-10 times.

BD Microtainer® SST™ tubes should be gently inverted 180° and back 8-10 times.



BD Microtainer® tubes with Microgard™ closure

| Cat. No. | Volume (µL) | Description/Additive | Additive | Closure | Colour | Unit of sales |
|----------|-------------|---|--------------------------------------|------------|---|---------------|
| 365975 | 250-500 | EDTA tubes for blood profile analysis | 1mg EDTA | Microgard™ |  | 200 (4x50) |
| 365966 | 200-400 | Plasma tubes | Lithium Heparine | Microgard™ |  | 200 (4x50) |
| 365986 | 400-600 | BD PST™ tubes | Lithium Heparine/Gel | Microgard™ |  | 200 (4x50) |
| 365988 | 400-600 | BD PST™ amber tubes (UV protection for sensitive tests e.g. bilirubin) | Lithium Heparine/Gel | Microgard™ |  | 200 (4x50) |
| 365993 | 400-600 | Glucose tubes | Sodium fluoride NA ₂ EDTA | Microgard™ |  | 200 (4x50) |
| 365968 | 400-600 | BD SST™ tubes | Clot activator/Gel | Microgard™ |  | 200 (4x50) |
| 365979 | 400-600 | BD SST™ amber tubes (UV protection for sensitive tests e.g. bilirubin) | Clot activator/Gel | Microgard™ |  | 200 (4x50) |
| 365964 | 250-500 | Serum tubes | No additive | Microgard™ |  | 200 (4x50) |
| 368933 | | BD Microtainer® tube extender for attachment to all BD Microtainer® tubes with Microgard™ closure (10mm diameter) | | |  | 200 (4x50) |

Capillary blood sampling

Lancets

Finger tip sampling

The ergonomic design of the BD Microtainer® Contact-Activated safety single-use lancet enables it to be held securely and the sampling point precisely located.

Its intuitive handling requires minimum training. The lancet is activated by being pressed onto the sampling location. Then the sharp point retracts automatically into the housing.

This lancet is available in three sizes: for a single drop of blood, and for a medium or large flow of blood. The sampling depth is predefined in each case and cannot be altered by the user. The lancet's batch number is printed on the device itself.

A study has shown that this lancet causes significantly less pain than comparable products.¹



BD Microtainer® Contact-Activated Lancets

| Cat No. | Piercing width and depth | Blood volume | Colour code | Unit of sales |
|---------|--------------------------|--------------|---|---------------|
| 366592 | 30G (0.31mm) x 1.5mm | One drop |  | 2000 (10x200) |
| 366593 | 21G (0.81mm) x 1.8mm | Medium flow |  | 2000 (10x200) |
| 366594 | 17G (1.5mm) x 2mm | Large flow |  | 2000 (10x200) |

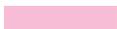
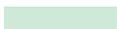
Heelstick sampling

The BD Microtainer® QuikHeel™ safety single-use incision lancet is for taking capillary blood samples from the heels of premature and newborn babies, and infants. When the button is pressed, an extra thin steel blade provides a fine, clean, surgical cut and ensures a good flow of blood. The penetration depth is predetermined to protect against bone infections and cannot be altered. The invisible, permanently shielded blade excludes the possibility of injury, or reuse. The ergonomic design enables it to be



held securely and the piercing point precisely located. The incision lancets are sterile and individually packed in blister packaging.

BD Microtainer® QuikHeel™ incision lancets

| Cat No. | Description | Piercing width and depth | Blood volume | Colour code | Unit of sales |
|---------|--|--------------------------|---------------------|---|---------------|
| 368102 | Incision lancet for premature babies | 1.75mm x 0.85mm | Medium to high flow |  | 200 (4x50) |
| 368103 | Incision lancet for newborn babies and infants | 2.5mm x 1mm | High flow |  | 200 (4x50) |

1. BD Clinical White Paper VS7499 – A Comparison of BD Microtainer® Contact-Activated Lancet (Low Flow, purple) with BD Microtainer® Genie™, LifeScan OneTouch® SureSoft™ Gentle, and SurgiLance™ One-Step PLUS Safety Lancets for Comfort, Ease of Use and Blood Volume.

BD Critical Care blood collection syringes

BD blood gas syringes

BD Critical Care collection syringes can be used to collect blood from a patient's artery or vein. They contain spray-dried calcium-balanced Lithium Heparin that enables the specimen to be analysed for Arterial Blood Gases (ABGs) and a host of critical care analytes.

BD A-Line™ blood gas syringes

BD A-Line™ syringes are used for blood collection by manual aspiration. They can be used for arterial or venous blood collection from an arterial or IV line, and are available in 1 mL slip tip, 3 mL slip tip and 3 mL BD Luer-Lok™ syringes.



BD A-Line™ blood gas syringes

| Cat No. | Syringe volume (mL) | Recommended fill volume (mL) | Units of heparin* (IU) | Connection | Closure |
|---------|---------------------|------------------------------|------------------------|------------|-----------|
| 364356 | 1 | 0.6 | 30 | Luer | Tip Cap |
| 364376 | 3 | 1.6 | 80 | Luer | Tip Cap |
| 364378 | 3 | 1.6 | 80 | Luer-Lok™ | Hemogard™ |

Syringes supplied in cases of 100.

Arterial blood sampling

BD blood gas syringes

BD Preset™ blood gas syringe

BD Vacutainer® Preset™ syringes are used for critical care testing on whole blood. The syringe plunger can be preset to a desired volume. As arterial blood fills the syringe, the residual air is expelled through the self-venting membrane.



BD Preset™ blood gas syringes

| Cat No. | Syringe volume (mL) | Recommended fill volume (mL) | Units of heparin* (IU) | Needle gauge | Needle length | Connection | Closure |
|---------|---------------------|------------------------------|------------------------|--------------|---------------|------------|-----------|
| 364416 | 1 | 0.6 | 30 | - | - | Luer | Tip Cap |
| 364316 | 3 | 1.6 | 80 | - | - | Luer-Lok™ | Hemogard™ |
| 364413 | 1 | 0.6 | 30 | 23G (0.6mm) | 1" (25mm) | Luer | Tip Cap |
| 364415 | 1 | 0.6 | 30 | 25G (0.5mm) | 5/8" (16mm) | Luer | Tip Cap |

Syringes supplied in cases of 100.

Arterial blood sampling

BD blood gas syringes

BD Preset™ safety blood gas syringe

BD Critical Care collection syringes are available with the BD Eclipse™ safety-engineered device, offering enhanced safety for the healthcare worker. The safety shield is integrated and is not an accessory to the needle. The needle bevel and safety shield are in alignment, ensuring no extra manipulation. The single-handed technique ensures no change in the collection technique and the double-locking mechanism is both visually and audibly confirmed for the healthcare worker.



BD Preset™ safety blood gas syringes

| Cat No. | Syringe volume (mL) | Recommended fill volume (mL) | Units of heparin* (IU) | Needle gauge | Needle length | Connection | Closure |
|---------|---------------------|------------------------------|------------------------|----------------------------|---------------|------------|-----------|
| 364390 | 3 | 1.6 | 80 | 22G (0.7mm) BD Eclipse™ | 1" (25mm) | Luer-Lok™ | Hemogard™ |
| 364391 | 3 | 1.6 | 80 | 23G (0.6mm) BD Eclipse™ | 1" (25mm) | Luer-Lok™ | Hemogard™ |
| 364393 | 3 | 1.6 | 80 | 25G (0.5mm) BD Eclipse™ | 5/8" (16mm) | Luer-Lok™ | Hemogard™ |

Syringes supplied in cases of 100.

* Spray dried, calcium balanced lithium heparin

Urine collection products

BD Vacutainer® urine collection system

BD Vacutainer® urine collection system is a standardised and hygienic system that can be used right where the sample is taken. It provides both patient and user with the advantages of a closed system that will provide reliable diagnostic results.

For urinalysis, BD offers a wide range of volumes for all patient types, with or without preservative, to be used with BD collection devices, specimen cups, 24 hour 3L containers and transfer straws.

For microbiology determinations, BD also offers a wide range of volumes for all patient types with boric acid based preservative tubes, all clinically validated for 48 hour specimen stability at room temperature. Once sampled from the various patient collection sites, the BD leak proof evacuated urine tubes can be safely transported to the laboratory for analysis. The BD Vacutainer® closed urine collection system is designed to enhance accurate patient results with reduced risk of healthcare worker exposure to hazardous specimens.



BD Vacutainer® tubes for urinalysis

| Cat No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|---------|-------------|-----------|---|----------|-------|---|
| 368500 | 4 | 13x75 | Without Additive/ Round Bottom | PET | Paper |  |
| 368501 | 6 | 13x100 | Without Additive/ Round Bottom | PET | Paper |  |
| 365000 | 9.5 | 16x100 | Without Additive/ Conical Bottom | PET | Paper |  |
| 364938 | 10 | 16x100 | Without Additive/ Round Bottom | PET | Paper |  |
| 364915 | 11 | 16x100 | Without Additive/ Round Bottom | PET | Paper |  |
| 365017 | 8 | 16x100 | Stabiliser* mercury free/ Round Bottom | PET | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

* With stabiliser (chlorhexadine, ethyl paraben and Na propionate)

Urine collection products

BD Vacutainer® urine tubes for microbiology

| Cat. No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|----------|-------------|-----------|-------------------------------|----------|-------|---|
| 364958 | 4 | 13x75 | Stabiliser**/ Round Bottom | PET | Paper |  |
| 364955 | 10 | 16x100 | Stabiliser**/ Round Bottom | PET | Paper |  |

All tubes are supplied in boxes of 100 / cases of 1000.

** Stabiliser for microbiological investigations consisting of boric acid, sodium formate and sodium borate, up to 48 hours stabilisation of bacteria growth at room temperature.

BD Vacutainer® kits for microbiology

| Cat. No. | Volume (mL) | Size (mm) | Specification | Material | Label | Closure |
|----------|-------------|-----------|-------------------------------------|----------|-------|---|
| 364959 | 4 | 13x75 | Stabiliser**/ Kit includes straw | PET | Paper |  |
| 364944 | 10 | 16x100 | Stabiliser**/ Kit includes straw | PET | Paper |  |

For kits (Cat. No. 364959 and 364944), the tubes are supplied in boxes of 50 / cases of 200.

** Stabiliser for microbiological investigations consisting of boric acid, sodium formate and sodium borate, up to 48 hours stabilisation of bacteria growth at room temperature.

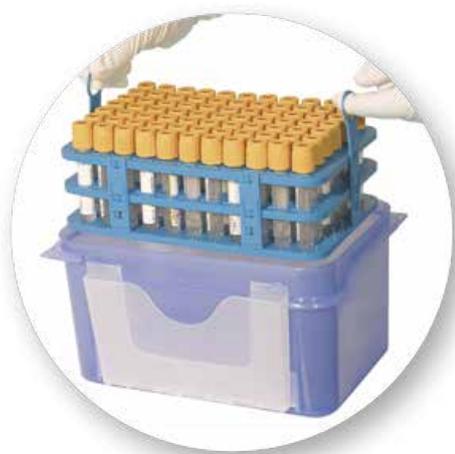
BD Vacutainer® urine collection containers and transfer units

| Cat No. | Description | Unit of sales |
|---------|--|---------------|
| 364941 | Polypropylene urine cup with screw closure and integrated transfer unit, capacity 120mL, internally sterile | 200 |
| 364982 | Coloured polypropylene 24 hour collection container for the protection of sensitive analytes, with screw closure and integrated urine transfer unit, capacity 3 litres, with scale for volume checking | 40 |
| 364940 | Specimen transfer straw | 1000 (10x100) |

NEW MoveBag & MoveBox system for interlaboratory transportation

The biological specimen transportation system ensures your laboratory complies with international regulations:

- ISO 15189
- International Carriage of Dangerous Goods by Road (ADR) 2011 including packaging instructions P650 for UN3373 products
- UNI EN 829/98 Pressure resistance test & Drop Test



Tube Racks and Absorbents

| Cat No. | Description | Unit of sales |
|---------|---|---------------|
| 368705 | Tube rack for 13mm tubes, fits 77 tubes | 24 racks |
| 367218 | Tube rack for 16mm tubes, fits 77 tubes | 24 racks |
| 368711 | Absorbent - size: 200 x 120 mm | 100 pieces |

MoveBox

| Cat No. | Description | Unit of sales |
|---------|---|---------------|
| 368704 | Box - Blue transparent | 12 boxes |
| 368702 | MoveBox + tube rack for 13 mm tubes+ 2 absorbants | 12 boxes |
| 368703 | MoveBox + tube rack for 16 mm tubes+ 2 absorbants | 12 boxes |

NEW

MoveBag

| Cat No. | Description | Dimensions (external) | Unit of sales |
|---------|---|-----------------------|---------------|
| 366911 | Isothermic MoveBag, for 2 Movebox, navy blue, | 305 x 210 x 270 mm | 2 bags |
| 368701 | Isothermic MoveBag, for 4 Movebox, navy blue | 390 x 280 x 270 mm | 2 bags |

MoveBox and MoveBag Kit

| Cat No. | Description | Unit of sales |
|---------|--|---------------|
| 368700 | MoveBag + 4 MoveBox with tube rack for 13mm tubes and 2 absorbants | 2 kits |



Example of how the MoveBag for Phlebotomists can be organized

All shown items are seperately available
Optionally your logo can be printed on the bag

MoveBag for Phlebotomists

| Cat No. | Description | Dimensions (external) | Unit of sales |
|---------|--|-----------------------|---------------|
| 361581 | Isothermic MoveBag, red, adjustable compartments | 450 x 280 x 280 mm | 2 bags |

Temperature Packs

| Cat No. | Description | Weight | Unit of sales |
|---------|---|--------|---------------|
| 368707 | Eutectic system to stabilize temperature at 22° | 0.2 kg | 12 units |
| 368708 | Eutectic system to stabilize temperature at 22° | 1.1 kg | 6 units |
| 368709 | Eutectic system to stabilize temperature at 4° | 0.2 kg | 12 units |
| 368710 | Eutectic system to stabilize temperature at 4° | 1.1 kg | 6 units |

BD Vacutainer® Stretch Tourniquet

BD offers the BD Vacutainer® Stretch Tourniquet which is latex-free. A study found that blood contamination of tourniquets was common, occurring in 31% of tourniquets examined¹. Use of a single-use tourniquet will minimise the risk of infection to healthcare workers and patients. The BD Vacutainer® Stretch Tourniquet is packaged in an easy-to-use dispenser which is also convenient for storage purposes.

1. Forester G, Joline C, Wormser GP. Blood Contamination of tourniquets used in routine phlebotomy. Am J Inf Control 1990; 18:386-90



BD Vacutainer® Tourniquets

| Cat No. | Description | Unit of sales |
|---------|--|---------------|
| 367204 | Single use tourniquet, latex-free, 25 tourniquets in one packaging unit, perforated for separation without other equipment | 500 (20x25) |
| 367218 | BD Pronto™ Reusable Tourniquet | 6 |

DIFF-SAFE®

BD Vacutainer® - Preanalytical Systems offers the DIFF-SAFE® blood dispenser for preparing blood slides.



Blood dispenser

| Cat No. | Description | Unit of sales |
|---------|------------------------------------|---------------|
| 366005 | DIFF-SAFE®* for differential count | 1000 (10x100) |

*DIFF-SAFE® is a registered trademark of Alpha Scientific Corporation.

BD™ Sharps Containers

BD Sharps Containers

- A range of Sharps Disposal containers designed for “point of use” disposal to ensure maximum safety¹
- There are on average 1 million² needle stick injuries in Europe every year. Approximately 30%³ of these are still associated with the disposal process.
- The BD Sharps Disposal System provides an environment and an approach that is focused on “Safety” to help reduce the risks of blood exposure and needle stick injuries associated with the disposal process⁴



Containers

| Cat No. | Description | Product Dimensions (L x W x H / mm) | Usable Capacity (Litre) | Unit of sales |
|---------|-------------------------|-------------------------------------|-------------------------|---------------|
| 302434 | 0.45 L Sharps Container | 105 x 50 x 170 | 0.36 | 100 |
| 367202 | 0.87L Sharps Container | 89 x 74 x 168 | 0.7 | 50 |
| 305624 | 1.5 L Sharps Container | 165 x 160 x 205 | 1.2 | 40 |
| 305625 | 3.0 L Sharps Container | 182 x 181 x 260 | 2.4 | 25 |
| 305626 | 5.0 L Sharps Container | 304 x 222 x 208 | 4.0 | 20 |
| 305627 | 7.0 L Sharps Container | 304 x 222 x 255 | 5.6 | 16 |
| 300479 | 22.7 L Sharps Container | 323 x 227 x 445 | 18.2 | 12 |

All BD Sharps Container have compatible brackets for placement on flat surfaces, secured to walls or for placement on medication carts. For more information, please contact your local Sales Representative.

1. «Selecting, Evaluating and Using Sharps Disposal Containers» CDC NIOSH Publication NO. 97-111.

2. «European Healthcare Workers at Risk» 11th May 2004.

3. «Epinet Sharps Object Injury Report (48 Hospitals) 2003.

4. «European Healthcare Workers at Risk» 11th May 2004.

Additional information

| | |
|--|---|
|    The CE mark, signifying compliance with the European IVD MD Directive, 98/79/EC or the MD Directive 93/42/EEC. | |
|  Catalogue or re-order number |  Lot number or batch number |
|  Use by, expires |  Use once or do not reuse |
|  Sterilised by moist heat |  Sterile fluid path. Sterilised by irradiation |
|  Sterile fluid path. Sterilised by irradiation |  Sterilised by Ethylene Oxide gas |
|  Keep away from sunlight (may show temperature range) |  Protect from any light source |
|  Fragile |  Storage temperature range |
|  This way up |  Recycle |
|  Date of manufacture |  Serial number |
|  "Caution" - consult instructions for use for important cautionary information |  Keep dry |
|  Manufacturer |  <i>In vitro</i> diagnostic medical device |
|  Consult instructions for use |  Authorised representative in the EU community |
|  Non-Pyrogenic |  Do not use if packaging is damaged |

| | |
|------------|--------------------------|
| K2E | EDTA - Dipotassium salt |
| K3E | EDTA - tripotassium salt |
| N2E | EDTA - disodium salt |
| 9NC | Trisodium citrate 9:1 |
| 4NC | Trisodium citrate 4:1 |
| FX | Fluoride/Oxalate |
| FE | Fluoride/EDTA |
| FH | Fluoride/Heparin |
| LH | Lithium Heparin |
| NH | Sodium Heparin |
| Z | None (no additive) |

The abbreviations used in this catalogue

have the following meanings:

PU = Packaging unit

G = Gauge

RT = Room temperature

RCF = Relative centrifugal force

= g-number

Product quality statement

Product Compliance

BD Vacutainer® Blood Collection Tubes and ancillary equipment are (non Annex II) In-Vitro Diagnostic Medical Devices. These comply with the requirements described in the European In Vitro Diagnostic Medical Device Directive 98/79/EC.

BD Vacutainer® Eclipse™ Signal™ Blood Collection Needles, BD Vacutainer® Blood Collection Sets, BD Safety-Lok™ Blood Collection Sets, BD Microtainer® Contact-Activated Lancets and Critical Care Collection Syringes with needles are (class IIa) Medical Devices and as such, comply with the requirements of the European Medical Device Directive, 93/42/EEC.

All product unit labels (and most packaging levels) bear the CE mark, demonstrating conformity to the above Directives.

The UK manufacturing plant, which supplies most European product, is certificated to ISO 13485 and ISO 14001:4. As a supplier to the US market the plant is also subject to FDA inspection and therefore holds an FDA establishment registration certificate. Copies of all these certificates can be provided upon request.

Other BD manufacturing plants carry similar certification, which can also be provided upon request.

All products are designed and manufactured in accordance with the relevant international and/or European standards.

The product shelf life is based on data from stability testing and varies according to specific products. All expiry dates are clearly printed on product unit labels.

Clinical Data

Prior to launching a new product BD conducts extensive clinical testing and data can be provided upon request.

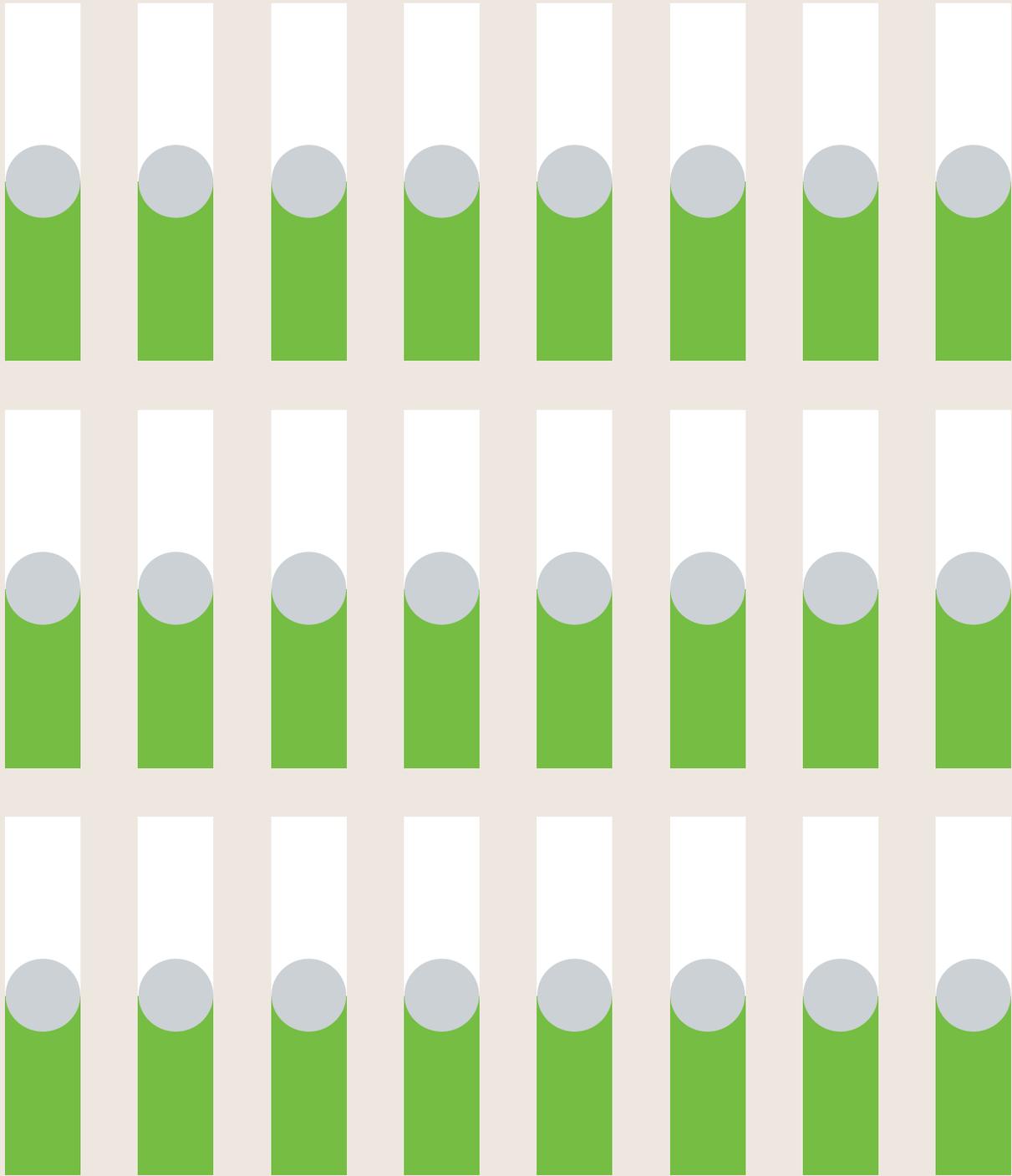
Whenever changing any manufacturer's blood collection tube type, size, handling, processing or storage condition for a particular laboratory assay, the laboratory personnel should review the tube manufacturer's data to establish/verify the reference range for a specific instrument/reagent system. Based on such information, the lab can then decide if a change is appropriate.

Product sterilisation

All products (where applicable) are sterilised using either gamma irradiation in accordance with ANSI/AAM/ISO 11137 "Sterilization of health care products -- Radiation -- Part 1: Requirements for development, validation and routine control of a sterilization process for medical devices", Ethylene Oxide (EtO) in accordance with ISO 11135 "Sterilization of health care products -- Ethylene oxide -- Part 1: Requirements for development, validation and routine control of a sterilization process for medical devices" or Moist Heat Sterilisation in accordance with EN ISO 17665 "Sterilization of health care products -- Moist heat -- Part 1: Requirements for the development, validation and routine control of a sterilization process for medical devices". Microbiological environmental assessment for bio-burden levels is conducted regularly.

The sterilisation of **BD Vacutainer®** products is controlled by European Standards:

| | |
|--------------|--|
| EN ISO 11135 | Sterilization of health care products -- Ethylene oxide -- Part 1: Requirements for development, validation and routine control of a sterilization process for medical devices |
| EN ISO 11137 | Sterilization of health care products -- Radiation -- Part 1: Requirements for development, validation and routine control of a sterilization process for medical devices |
| EN ISO 17665 | Sterilization of health care products -- Moist heat -- Part 1: Requirements for the development, validation and routine control of a sterilization process for medical devices |
| EN 556 | Requirement for terminally sterilised devices to be labelled "STERILE" |



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