BD

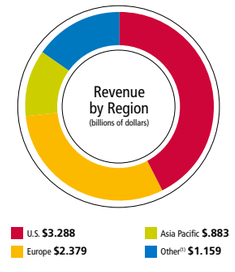
Helping all people live healthy lives

BD Diagnostics Preanalytical Systems

Product Catalogue 2014-2015

BD At a Glance

BD is a leading global medical technology company that develops, manufactures and sells medical devices, instrument systems and reagents. We are dedicated to improving people's health throughout the world. BD is focused on improving drug delivery, enhancing the quality and speed of diagnosing infectious diseases and cancers, and advancing research, discovery and production of new drugs and vaccines. Our capabilities are instrumental in combating many of the world's most pressing diseases. Founded in 1897 and headquartered in Franklin Lakes, New Jersey, we employ nearly 30,000 associates in more than 50 countries throughout the world. We serve healthcare institutions, life science researchers, clinical laboratories, the pharmaceutical industry and the general public.



BD Medical

BD Medical is among the world's leading suppliers of medical devices and a leading innovator in injection- and infusion-based drug delivery since 1906, when the Company built the first-ever facility in the U.S. to manufacture needles and syringes. The BD Medical segment is focused on providing innovative solutions to reduce the spread of infection, enhance diabetes treatment and advance drug delivery.

Customers Served

- Hospitals and clinics
- Physicians' office practices
- Consumers and retail pharmacies
- Governmental and nonprofit public health agencies
- Pharmaceutical companies
- Healthcare workers

Products

- Needles and syringes
- Intravenous catheters
- Safety-engineered and auto-disable devices
- Prefillable drug delivery systems
- Prefilled IV flush syringes
- Insulin syringes and pen needles
- Regional anesthesia needles and trays
- Self-injection systems
- Sharps disposal containers
- Closed-system drug transfer devices

*Amounts may not add due to rounding. See BD Annual Report 2012.

BD Diagnostics

BD Diagnostics is a leading provider of products for the safe collection and transport of diagnostics specimens, as well as instruments and reagent systems to accurately detect a broad range of infectious diseases, healthcare-associated infections (HAIs) and cancers. The BD Diagnostics segment focuses on improving health outcomes for patients by providing laboratories with solutions that improve quality, enhance laboratory system productivity and inform medical decisions.

Customers Served

- Hospitals, laboratories and clinics
- Reference laboratories
- Blood banks
- Healthcare workers
- Public health agencies
- Physicians' office practices
- Industrial and food microbiology laboratories

Products

- Integrated systems for specimen collection
- Safety-engineered blood collection products and systems
- Automated blood culturing systems
- Molecular testing systems for infectious diseases and women's health
- Microorganism identification and drug susceptibility systems
- Liquid-based cytology systems for cervical cancer screening
- Rapid diagnostic assays
- Plated media
- Microbiology laboratory automation

BD Biosciences

BD Biosciences is a world leader in bringing innovative diagnostic and research tools to life science researchers, clinical researchers, laboratory professionals and clinicians who are involved in basic research, drug discovery and development, biopharmaceutical production and disease management. The BD Biosciences segment is focused on continually advancing the science and applications associated with cellular analysis.

Customers Served

- Research and clinical laboratories
- Academic and government institutions
- Pharmaceutical and biotechnology companies
- Hospitals and reference laboratories
- Blood banks

Products

- Fluorescence-activated cell sorters and analyzers
- Monoclonal antibodies and kits for cell analysis
- Reagent systems for life science research
- Cell imaging systems
- Cell culture media and supplements for biopharmaceutical manufacturing

(1) Other is comprised of Latin America, Canada and Japan.

Sustainability: An Essential Element of BD

We view sustainability as a portfolio of complementary initiatives and actions that combine to help us achieve our purpose of *Helping all people live healthy lives*.

Areas of Focus

We have identified five areas that are the most important to us, our stakeholders and our business, and we have made them the focus of our sustainability efforts:

Guiding our Business with Good Governance and Ethics.

All of our sustainability work begins and ends with a commitment to the most ethical business practices. Our sustainability efforts are governed by BD's Management Committee, which maintains a dialogue with our stakeholders, our businesses and our associates about issues relevant to each group.

Addressing Unmet Health Needs.

We work to address the world's unmet health needs by collaborating with governments, international agencies and nongovernmental organizations (NGOs) and by deploying our products and institutional knowledge. Our Global Health function is achieving a lasting, positive impact in areas such as battling the HIV/ AIDS and TB pandemics and strengthening health and laboratory systems in developing countries.

Ensuring the Safety and Environmental Performance of Our Products.

Maintaining the quality and safety of our products is paramount. We continually focus on social and environmental concerns from the quality and life cycle of our products to the safety of patients and healthcare workers.

Protecting and Preserving the Environment.

We focus our environmental thinking on improving the impact of our operations as well as our products. Sustainable operations and product stewardship have the greatest potential to help BD protect the environment and prepare for issues such as climate change and resource scarcity.

Making BD an Even Better Place to Work.

In more than 50 countries around the world, nearly 30,000 BD associates work every day to help us achieve our purpose of *Helping all people live healthy lives*. In turn, we make every effort to ensure their health, safety and professional development.

Guiding our Business with Good Governance and Ethics

Addressing Unmet Health Needs

Ensuring the Safety and Environmental Performance of Our Products

Protecting and Preserving the Environment

Making BD an Even Better Place to Work

BD
Helping all people live healthy lives

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.

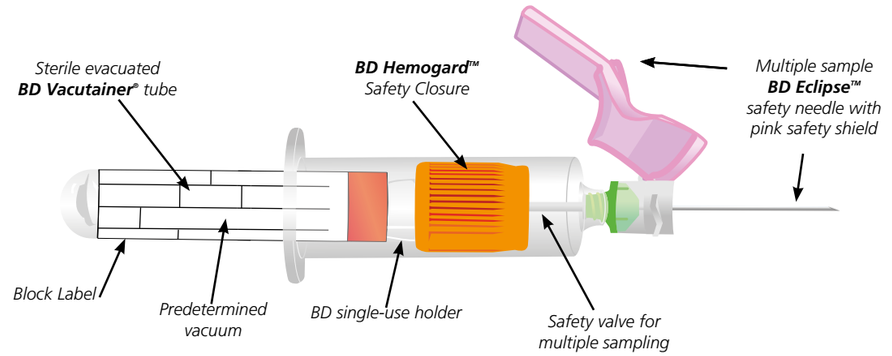
BD

Contents

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 technique[1].

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.

BD Diagnostics - Preanalytical Systems full range of products includes:

- Safety engineered devices such as the **BD Vacutainer® Eclipse™** blood collection needle and **BD Vacutainer® Push Button** blood collection sets which allow for collection from patients of all types with the added benefit of protecting healthcare workers from the risk of needle stick injuries.
- **BD Microtainer®** tubes for paediatric patients and capillary sampling used to collect blood with **BD Contact-Activated Lancets** and **BD Quikheel™ Lancets.**
- **BD Vacutainer®** urine collection system for the collection and transport of urine samples.
- **BD Vacutainer®** blood collection adapters which are compatible with all BD Infusion devices.
- **Critical Care collection syringes** including safety products for arterial blood collection and analysis.
- An expanding range of **Molecular Diagnostic** products.

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

Helping you improve healthcare worker safety

The EU Directive on the prevention of Sharps Injuries (2010/32/EU)[1], which forces healthcare organizations to adopt safety measures that protect healthcare workers from needlestick injuries, was to be transposed into national law by all EU member states by 11th May 2013.

Netherlands

The EU Directive has been incorporated into the Dutch Working Environment Act[2], by building on the existing law of 22th August 2011. This law went into force on 1st January 2012. Two clauses were incorporated into the existing Decree:

- The provision of medical devices incorporating safety-engineered protection mechanisms in case there is a risk of injury or infection by sharps
- The practice of recapping shall be banned with immediate effect

Belgium

On 17th April 2013, Belgium[3] transposed the European Directive into national law by expanding its Royal Decree of 4th August 1996. The adapted Royal decree provides specific detail on the purpose and scope, risk assessment and preventative measures (such as the provision of safety-engineered devices on the basis of the results of the risk assessment), healthcare worker training, reporting, response and follow up.

Luxembourg

The European Commission, the labour inspection and the Federation of Luxembourg Hospitals have initiated the negotiations with regards to the transposition of the European Directive 2010/32/EU into national law in the first months of 2013. The institutions planned to submit the draft for this grand-ducal law to the Council of Government in July 2013[4].

BD Safety Concept

BD is helping healthcare organisations to improve healthcare worker safety and comply with the new legislation via training, the provision of educational resources, advice, and support with risk assessments which are a cornerstone to ensuring compliance.

A useful tool available to all is the BD safety website, which provides information on our holistic approach to healthcare worker safety. Health economics, risk assessment, conversion management and training are all crucial elements. The site also includes details of our broad range of safety-engineered medical devices.

The BD Healthcare Worker Safety website can be accessed at http://www.bd.com/europe/safety

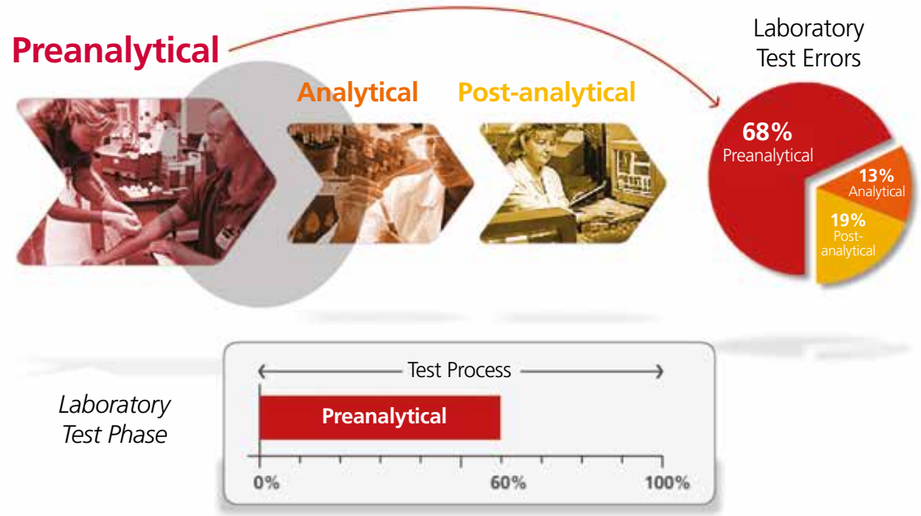
1. 2010/32/EU Directive of the Council of May 10, 2010 to implement the framework agreement concluded by HOSPEEM and EPSU on the prevention of acute injuries in the hospital and healthcare industry
2. Staatsblad van het Koninkrijk der Nederlanden (2011: 399). Besluit van 22 augustus 2011, houdende wijziging van het Arbeidsomstandighedenbesluit in verband met opname van regels uit de Beleidsregels Arbeidsomstandighedenwetgeving. Art I (H) p. 3, 7-8 & 10-12.
3. Moniteur Belge (03.05.2013). Arrêté royal modifiant l' arrêté royal du 4 août 1996 concernant la protection des travailleurs contre les risques liés à l'exposition à des agents biologiques au travail, en vue de la prévention des blessures par objets tranchants dans le secteur hospitalier et sanitaire [2013/202242]. Belgisch Staatsblad (03.05.2013). Koninklijk besluit tot wijziging van het koninklijk besluit van 4 augustus 1996 betreffende de bescherming van de werknemers tegen de risico's bij blootstelling aan biologische agentia op het werk, met het oog op de preventie van scherpe letsels in de ziekenhuis- en gezondheidszorgsector [2013/202242].
4. Ministère des Affaires étrangères, Grand-Duché de Luxembourg. Rapport sur l'état de transposition des directives européennes 2012-2013 (Etat des lieux au 10 mei 2013).

Let BD help you reduce the real cost of a preanalytical error in your hospital

BD Laboratory Consulting Services®

Preanalytical errors impact the patient, clinician, the laboratory and your healthcare system. So where do these errors occur? For a sample to be analysed, there are three phases to the testing process:

- Preanalytical
- Analytical
- Post-analytical



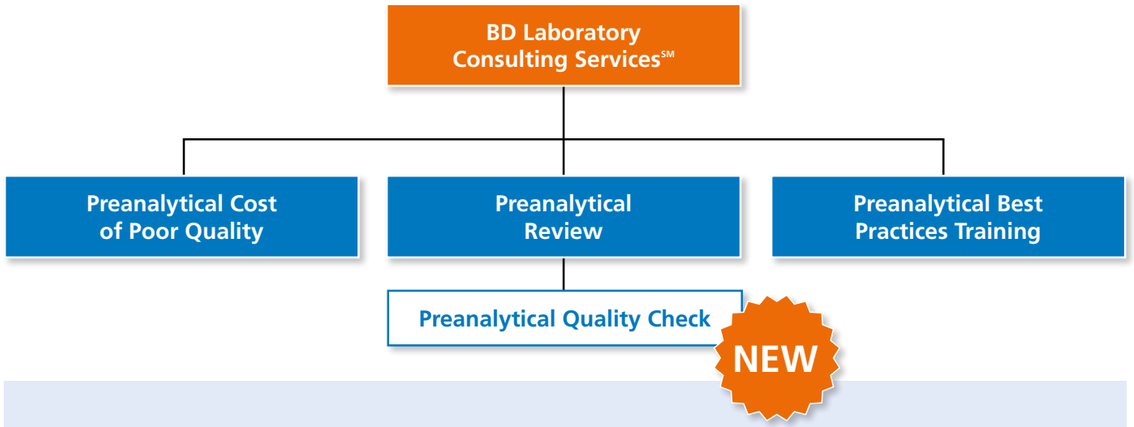
The Facts

70-85% of clinical decisions are based upon information derived from laboratory test results[1,2]. Poor quality samples can lead to inaccurate test results which, in turn, can have a huge impact on your institution's ability to provide optimal clinical outcomes for your patients.

60% of the test process occurs in the preanalytical phase and 68% of all laboratory test errors occur in the preanalytical phase[3,4,5]. These errors can be as basic as an unlabelled or mislabelled specimen or incorrect sample collection technique. Just one small failure in your system can have disastrous consequences both in terms of patient diagnosis and care as well as financially.

1. Foubister, Vida. Cap Today Bench press: The Technologist/technician shortfall is putting the squeeze on laboratories nationwide; September 2000
2. Datta, P. Resolving Discordant Samples. Advance for the Administrators of the Laboratories; July 2005: p.60.
3. Bonini P, Plebani M, Cerotti F, Bubboli F. Errors in laboratory medicine. Clin Chem 2002:48:691-698
4. Plebani M & Carraro P. Mistakes in a Stat Laboratory: types and frequency. Clinical Chemistry 1997, 43(8): 1348-1351.
5. Carraro P & Plebani M. Errors in a Stat Laboratory: types and frequency 10 years later. Clinical Chemistry 2007, 53(7): 1338-1342.

Let BD help you reduce the real cost of a preanalytical error in your hospital



BD Laboratory Consulting Services℠ Preanalytical Quality Check

BD has a new service, BD Laboratory Consulting Services℠ Preanalytical Quality Check, which is delivered by the BD team of clinical specialists. This iPad app helps maximise your laboratory efficiency through smarter auditing of the preanalytical phase.

What does it do?

- Faster auditing - Identifies and quantifies the causes of preanalytical errors fast
- Smarter reporting - Analysed results delivered in a customised report
- Stronger compliance - Proposes corrective actions to empower your organisation to improve sample quality, workflow and efficiency.

BD Laboratory Consulting Services℠ Preanalytical Best Practices Training

The provision of training and education around the blood collection process can seem an impossible task for any healthcare system when their potential audience is hundreds, maybe thousands of personnel in any given facility.
In addition, gaining compliance and achieving best practice can be difficult and staff turnover makes the task even harder. Preanalytical Best Practices Training is an interactive programme designed to embed pre-analytical principles and best practice into your organisation.

Produced and run by BD specialists, it contains a series of modules to support best practice in the preanalytical phase of specimen collection and sampling. E modules are also being developed to help your facility manage multiple site/virtual assessments.

BD Laboratory Consulting Services℠ Preanalytical Cost of Poor Quality

In conjunction with Frost & Sullivan, BD Diagnostics - Preanalytical Systems have researched and developed a new service which quantifies the cost of poor preanalytical quality in your healthcare system.

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.

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:

- 0.105 M or 0.109 M of buffered trisodium citrate solution, equivalent to 3.2% trisodium citrate

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

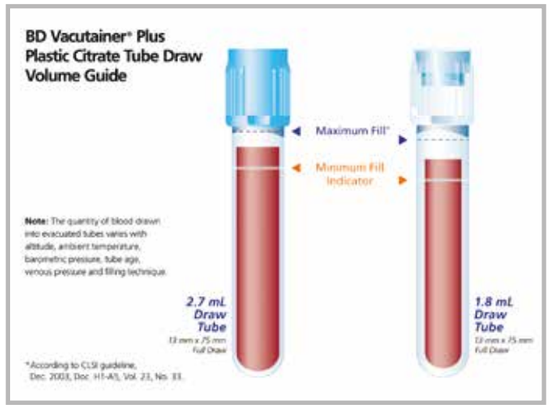
The Plus citrate tubes feature innovative tube geometry that minimises tube headspace and associated platelet activation to optimise APTT monitoring of unfractionated heparin patients.

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	Paper	
363097	1.8	13x75	Na Citrate (0.129M = 3.8%)	PET	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	
363079	2.7	13x75	Na Citrate (0.129M = 3.8%)	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	
367704	4.5	13x75	Na Citrate (0.129M = 3.8%)	Glass	Paper	
366575	6	13x75	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/~~Silicone~~	Glass	Paper	

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

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	

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°C[1].

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.

1. BD White Paper VS7228: Performance of BD Vacutainer® SST II *Advance* tubes at Four and Five Minute Centrifugation Times

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.

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.

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	

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

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.

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 (K_2EDTA) for haematological investigation. K_2EDTA 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® K_2EDTA tubes

Cat No.	Volume (mL)	Size (mm)	Specification	Material	Label	Closure
368841	2	13x75	K_2EDTA	PET	Paper	
368274	2	13x75	K_2EDTA	PET	Transparent	
368856	3	13x75	K_2EDTA	PET	Paper	
368499	3	13x75	K_2EDTA	PET	Transparent	
368861	4	13x75	K_2EDTA	PET	Paper	
367862	4	13x75	K_2EDTA	PET	Transparent	
367864	6	13x100	K_2EDTA	PET	Paper	
365900	6	13x100	K_2EDTA	PET	Transparent	
367525	10	16x100	K_2EDTA	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 Ethlyenediaminetetraacetic Acid Anticoagulation of Blood for Blood Cell Counting and Sizing, Am J Clin Patholo 1993;100: 371-372.

Venous blood sampling
Haematology

BD Vacutainer® K_3EDTA tubes

Cat No.	Volume (mL)	Size (mm)	Specification	Material	Label	Closure
367836	2	13x75	K_3EDTA	PET	Block	
368857	3	13x75	K_3EDTA	PET	Block	
368860	4	13x75	K_3EDTA	PET	Block	
361017	5	13x75	Aprotinine (250IU)/K_3EDTA	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_2EDTA (Spray)	PET	Crossmatch	
367941	6	13x100	K_2EDTA (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	
367741	2.4	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	
366666	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 Westergren[1], incorporating temperature correction[2]

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, R.W. 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_2EDTA	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 temperature[1]
  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_2EDTA/Gel	PET	Transparent	
362799	8.5	16x100	K_2EDTA/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 degration 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.

For more information please visit www.PreAnalytiX.com.

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.

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

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)

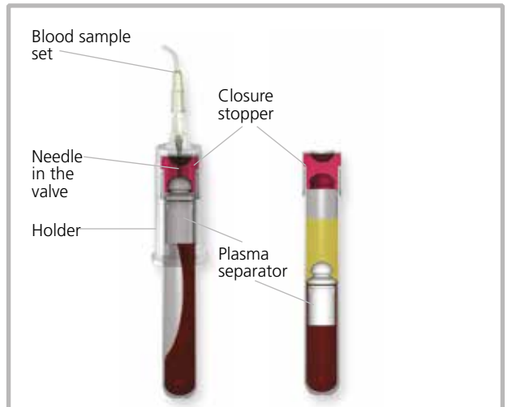
If 2500 g cannot be achieved:
1600 g for 30 min. or
1100 g for 30 min.

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.

More info available on
www.bd.com/proteomics !

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_2EDTA/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_2EDTA/Protease, Esterase & DPP-IV Inhibitor	PET	Paper	
366421	8.5	16x100	15.3mg K_2EDTA/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

BD BACTEC™ Plastic Bottles

The lastest 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
442021	BD BACTEC™ Bottle Plastic Lytic Anaerobic 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 flocked 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 flocked 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 flocked applicator swab.	50

Safety blood collection needles

BD Vacutainer® Eclipse™ blood collection needle

The BD Vacutainer® Eclipse™ safety 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™ safety 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™ safety 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

Safety 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™ blood collection needles

Cat No.	Size	Length	Colour code	Unit of sales
368837	21G (0.8mm)	1.25" (32mm)		500 (10x50)
368838	22G (0.7mm)	1.25" (32mm)		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)	1.25" (32mm)		400 (8x50)
368836	22G (0.7mm)	1.25" (32mm)		400 (8x50)

BD Vacutainer® Passive Shielding blood collection needle

The BD Vacutainer® Passive Shielding blood collection needle is designed to provide the highest amount of protection against needlesticks during a blood draw. The needle's safety shield releases automatically upon insertion of the first tube, providing protection from the moment the first tube is inserted through product disposal. The Safety Shield covers the needle immediately upon withdrawal from patient, even if the needle is withdrawn due to sudden or unexpected patient movement. Ideal for environments where patient cooperation is not assured.

BD Vacutainer® Passive Shielding blood collection needles

Cat No.	Size	Length	Colour code	Unit of sales
368636	21G (0.8mm)	1" (25mm)		200 (4x25)
368637	22G (0.7mm)	1" (25mm)		200 (4x25)

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 silicone, 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)		1000 (10x100)
360211	22G (0.7mm)	1.5" (38mm)		1000 (10x100)
360212	21G (0.8mm)	1" (25mm)		1000 (10x100)
360213	21G (0.8mm)	1.5" (38mm)		1000 (10x100)
360214	20G (0.9mm)	1" (25mm)		1000 (10x100)
360215	20G (0.9mm)	1.5" (38mm)		1000 (10x100)

Safety 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 sets with luer adapter

Cat No.	Size	Needle length	Tubing length	Luer adapter	Colour code	Unit of sales
367338	21G (0.8mm)	0.75″ (19mm)	7″ (178mm)	With		200 (4x50)
367344	21G (0.8mm)	0.75″ (19mm)	12″ (305mm)	With		200 (4x50)
367336	23G (0.6mm)	0.75″ (19mm)	7″ (178mm)	With		200 (4x50)
367342	23G (0.6mm)	0.75″ (19mm)	12″ (305mm)	With		200 (4x50)
367335	25G (0.5mm)	0.75″ (19mm)	7″ (178mm)	With		200 (4x50)
367341	25G (0.5mm)	0.75″ (19mm)	12″ (305mm)	With		200 (4x50)

Safety blood collection sets

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)
367353	25G (0.5mm)	0.75″ (19mm)	7″ (178mm)		100 (5x20)
367356	25G (0.5mm)	0.75″ (19mm)	12″ (305mm)		100 (5x20)

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)

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)		200 (4x25)
368652	21G (0.8mm)	0.75" (19mm)	12" (305mm)		200 (4x25)
368655	23G (0.6mm)	0.75" (19mm)	7" (178mm)		200 (4x25)
368653	23G (0.6mm)	0.75" (19mm)	12" (305mm)		200 (4x25)

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 	various	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_2EDTA, 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	0.8mg 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 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	~~Clot activator~~	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

Safety 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 1mL slip tip, 3mL slip tip and 3mL 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.

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

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 urinanalysis

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	
364992	8	16x100	Stabiliser* mercury free/ Conical 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)

BD Vacutainer® urine tubes for microbiology

Cat. No.	Volume (mL)	Size (mm)	Specification	Material	Label	Closure
364958	4	13x75	Stabiliser**/ Round Bottom	PET	Paper	
364959	4	13x75	Stabiliser**/ Kit includes straw	PET	Paper	
364955	10	16x100	Stabiliser**/ Round Bottom	PET	Paper	
364944	10	16x100	Stabiliser**/ Kit includes straw	PET	Paper	

All tubes are supplied in boxes of 100 / cases of 1000, with the exception of the kits (Cat. No. 364959 and 364944) for which 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)

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 examined[1]. 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.

Accessories

Biological specimen transportation system

The biological specimen transportation system provides a complete range of transportation specimen containment boxes to satisfy the requirements of most laboratories.

Large number of samples

Tube racks

Secondary containers

Tertiary containers

Small number of samples

Hemobox 4

Assured compliance with International regulations

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

- Compliance with ISO15189: 2012 Preanalytical specimen transportation guidelines
- International Carriage of Dangerous Goods by Road (ADR) 2011 including packaging instructions P650 for UN3373 products
- IATA DGR International Air Transport Association Dangerous Good Regulations
- UNI EN 829/98 Pressure resistance test & Drop Test

Please contact your local BD office for more details.

Secondary Transport Boxes

Cat No.	Dimension (mm) (L x W x H)	Capacity (No. of Tubes 13mm)	Specification	Unit of sales
369641	242x169x155	60	Transparent	2
369642	305x245x155	120	Transparent	2
369643	390x230x173	180	Transparent	1
369644	500x285x225	300	Transparent	1

Tertiary Containers: bags

Cat No.	Dimension (mm) (L x W x H)	Capacity	Unit of sales
368712	280x200x190	369641 Transparent Secondary Box	2
368713	330x260x190	369642 Transparent Secondary Box	2
368714	410x260x210	369643 Transparent Secondary Box	1

Tertiary Containers: boxes

Cat No.	Dimension (mm) (L x W x H)	Isolated	Capacity	Unit of sales
369656	560x340x340	Yes	1 x 369644 1 x 369643	1
369658	510x280x260	Yes	1 x 369643	1
369657	480x290x350	No	2 x 369641 1 x 369642 1 x 369643	1

Tertiary Containers: isothermal dedicated boxes

Cat No.	Dimension (mm) (L x W x H)	Capacity	Unit of sales
369727	390x375x365	2 x 369641 1 x 369642	1
369726	195x95x61	2 syringes 4 tubes 13x75mm 2 tubes 13x100mm	20
368562	485x300x415	2 x 369641 2 x 369642	1

Box Accessories: racks

Cat No.	Dimension (mm) (L x W x H)	Description	Capacity	Unit of sales
369645	160x100x65	Tube Tray in Polyethylene	45 tubes 13mm	12
369646	160x100x103	Tube Tray in Polyethylene	28 tubes 16mm	12
369647	305x165x80	Tube Tray in Polyurethane	12 tubes 13mm + 12 bottles	5
369648	425x213x70	Urine Cup Tray in Polypropylene	18 urine cups	4
368563	213x140x70	Urine Cup Tray in Polypropylene	6 urine cups	5
369659	244x100x68	Tube Tray in Polyethylene	90 tubes 13mm	8
369710	165x100x68	Tube Tray in Polyethylene	60 tubes 13mm	10
369701	244x100x68	Tube Tray in Polyethylene	60 tubes 16mm	8
369702	165x100x68	Tube Tray in Polyethylene	40 tubes 16mm	10

Accessories

Box Accessories: cooling packs

Cat No.	Dimension (mm) (L x W x H)	Description	Intended Use	Unit of sales
368717	160x110x14	Freeze Board 200mL		10
369722	250x140x14	Freeze Board 400mL		10
368719	320x140x14	Freeze Board 800mL		10
369728	375x215x29	Freeze Board 2000mL	For use with 369656 only	2
368720	400x270x200	Freeze Kit for Isothermal Box	Complete kit (8 packs) for 369727	2

Box Accessories: absorbents

Cat No.	Dimension (mm) (L x W)	Intended Use	Unit of sales
369703	170x110	For use with 369641	10
369707	240x175	For use with 369642	10
369708	330x175	For use with 369643	10
369709	410x220	For use with 369644	10

BD Vacutainer® Hemobox 4

Cat No.	Dimension (mm) (L x W x H)	Colour	Capacity	Unit of sales	
366903	150x100x70	Blue	8 tubes, 1 holder, 3 needles	24	
366904	150x100x70	Green	8 tubes, 1 holder, 3 needles	24	
366905	150x100x70	Red	8 tubes, 1 holder, 3 needles	24	
366916				50	Spare absorbent for Hemobox 4
366917				50	Accessory: handle for Hemobox 4

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® blood collection needles, wingsets, lancets and arterial blood gas 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 are sterilised using either gamma irradiation in accordance with ANSI/AAM/ISO 11137 "Sterilisation of Health Care Products (Requirements for Validation and Routine Control - Radiation Sterilisation)", Ethylene Oxide (EtO) in accordance with ISO 11135 "Validation and Routine Control of Ethylene Oxide Sterilisation" or Moist Heat Sterilisation in accordance with EN554 "Sterilisation of Medical Devices - Validation and Routine Control of Sterilisation by Moist Heat". Microbiological environmental assessment for bio-burden levels is conducted regularly.

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

EN 550	Sterilisation of medical devices - Validation and routine control of ethylene oxide sterilisation
EN 552	Sterilisation of medical devices - Validation and routine control of sterilisation by irradiation
EN 554	Sterilisation of medical devices - Validation and routine control of sterilisation by moist heat
EN 556	Requirement for terminally sterilised devices to be labelled "STERILE"


CERTIFICATE OF REGISTRATION

Quality Management System

BSI Management Systems

British Standards Institution (BSI) - Certificate of Registration - Compliance with ISO 13485


Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM

BSI Management Systems

BSI - Environmental Management System - Certificate of Registration- Compliance with ISO 14001


EC Certificate

Production Quality Assurance

BSI

BSI - EC Certificate CE00362 (effective March 2004)

Additional information

CE	The CE mark, signifying compliance with the European IVD MD Directive, 98/79/EC
REF	Catalogue or re-order number
LOT	Lot number or batch number
	Use by, expires or best before
	Use once or do not reuse
STERILE	Sterilized by moist heat
STERILE R	Sterilised by irradiation
	Read instruction leaflet before use
STERILE EO	Sterilized by Ethylene Oxide gas
	Protect from sunlight (may show temperature range)
	Protect from any light source
	Fragile
°C	Storage temperature range
	This way up
	Recycle
	Date of manufacture
SN	Serial number
LATEX	Latex free
	Do not get wet
	Manufacturer
IVD	*In vitro* diagnostics

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)

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