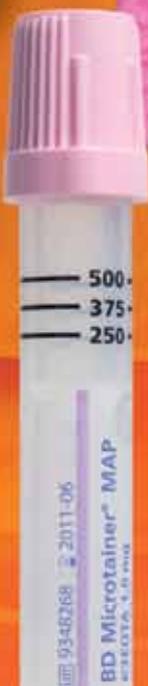


Product Catalogue

BD Diagnostics
Preanalytical Systems



Helping all people
live healthy lives



Every day millions of BD Vacutainer® Blood Collection Tubes manufactured in the UK are used in hospitals around the world.

For 30 years, BD has supported the UK economy by being a major employer in the South West of England. 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.

The Plymouth plant is located on a 27 acre site on the edge of Dartmoor National Park. When it opened in 1981, 90 employees manufactured four products at Plymouth, before a second plant was opened in 1988 to focus on PrecisionGlide™ needles. Today, 600 employees manufacture over 200 different products, including BD Vacutainer® tubes for haematology, coagulation and chemistry.

Within the UK, Becton Dickinson U.K. Limited continues to support the economy with a turnover of over £200 million (50% of which is exports) and employment of 918 personnel. BD has also demonstrated its future commitment to the UK with significant investment over the last 5 years.

Buying BD Vacutainer® products helps support the UK economy.



For more information about any of our products, please contact:



BD Diagnostics, Preanalytical Systems
The Danby Building
Edmund Halley Road
Oxford Science Park
Oxford OX4 4DQ
Tel: 01865 748844
www.bd.com

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Cell, protein and nucleic acid blood stabilisation

Accessories

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Arterial blood sampling (Critical Care Collection syringes)

Urine collection

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Venous blood sampling

Introduction

BD Vacutainer® Evacuated Blood Collection System

The BD Vacutainer® evacuated blood collection system is the most widely-used blood stabilisation tube in the world.



- CE marked to ensure product quality
- Reproducible blood draw with each tube having a predetermined vacuum
- Comprehensive range of additives to stabilise most blood components
- BD Hemogard™ safety closure provides optimal protection for users from patient blood
- Sterile tube ensures no contamination of samples
- A range of labels to ensure traceability of collected patient samples

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.

Helping you improve healthcare worker safety

The EU Directive on the prevention of Sharps Injuries in the Hospital and Healthcare Sector has been incorporated into UK national law by enforcing Statutory Instrument number 645, known as the Health and Safety (Sharp Instruments in Healthcare) Regulations 2013.

These regulations provide legal guidance and have been implemented in the UK to help combat the 100,000¹ injuries that are estimated to occur every year in the UK alone. The Regulations build on existing law and provide specific detail on requirements that must be undertaken by healthcare employers and their contractors.

The Regulations state that the unnecessary use of sharps should be avoided and recommend that, "when medical sharps are used at work, safer sharps are used so far as is reasonably practicable." 'Safer sharps' refer to medical sharps which incorporate mechanisms that can help to prevent the risk of accidental injury - for example, syringes and needles with a shield or cover that slides or pivots to cover the needle after use.

Safer sharps are proven to significantly reduce the incidence of occupational needle stick injuries, and to be most effective when introduced along with improved training and workplace procedures. The Regulations advise involving the end users of the equipment and their representatives in the development of information and training materials to be provided to employees to help ensure that they use new equipment safely.

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 an details of our range of safety-engineered medical devices.

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

To access the Health and Safety (Sharp Instruments in Healthcare) Regulations 2013, please visit <http://www.legislation.gov.uk/uksi/2013/645/made>

1. Health and Safety Executive, Management and prevention of sharps injuries: Inspection of NHS Trusts 2010/2011 by Occupational Health Inspectors, 1st July 2010-11-10 <http://www.hse.gov.uk/healthservices/needlesticks/sharp-injuries.pdf>

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 financially and in terms of patient diagnosis and care.

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 preanalytical 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.

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.

Venous blood sampling

Tube dimensions and sample volumes

Tube dimensions and sample volumes

BD Vacutainer® tubes are available in three different sizes as pictured below, each with different sample volumes. Tubes for special analysis may have a different size (e.g. sedimentation tubes).

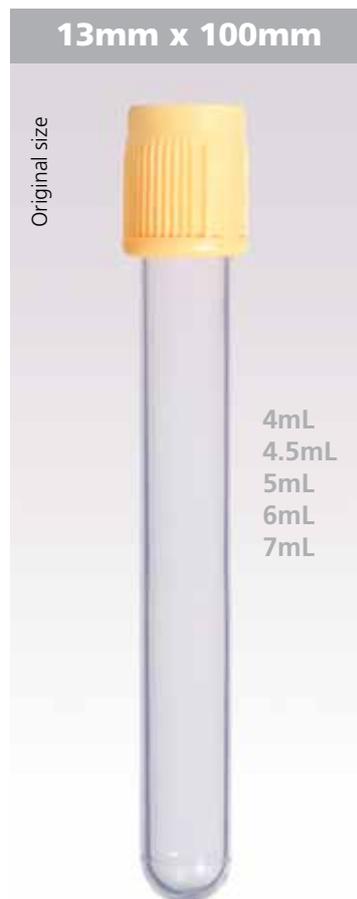
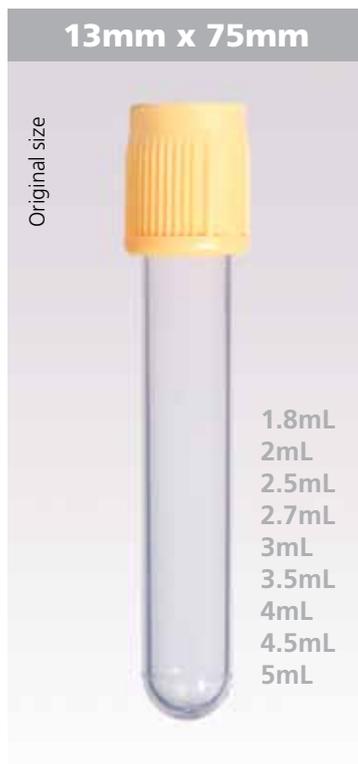
The volume given in mL on the tube refers to the amount of blood that will be taken from the patient. For tubes with a fluid additive, the final volume may deviate from this (amount of blood + additive).

Centrifugation

The centrifugation conditions for the various BD Vacutainer® tube types are listed on the corresponding pages of the catalogue. The times given refer only to the relative centrifugal force (RCF) and do not include the centrifuge acceleration and braking times.

BD Vacutainer® glass tubes should not be centrifuged at more than 2200 g (RCF). BD Vacutainer® Plus plastic tubes can withstand up to 10,000 g (RCF). We do not advise the centrifuging of damaged tubes.

For centrifuging BD Vacutainer® tubes, the use of a swing-out rotor is beneficial.



Venous blood sampling

Order of draw and specimen handling

Order of draw	Colour coding	Tube type	Recommended inversions	Minimum clotting time	Centrifuging conditions
Disposable tubes		EST or other suitable tube	not necessary	n/a	n/a
Blood culture		Anaerobic blood culture bottle	n/a	n/a	n/a
		Aerobic blood culture bottle	n/a	n/a	n/a
Citrate		Sodium citrate, plastic	3-4	n/a	2000-2500 g (RCF) for 10-15 min. at 18-25°C ²
		Sodium citrate & CTAD, glass	3-4	n/a	1500 g (RCF) for 15 min. at 18-25°C ²
		Sodium citrate, ESR, glass	8-10	n/a	n/a
		ACD	8-10	n/a	n/a
Serum		Serum with clot activator (silica particles)	5-6	60 min.	≤1300 g (RCF) for 10 min. at 18-25°C
		Serum thrombin	5-6	5 min.	≤1300 g (RCF) for 10 min. at 18-25°C
		BD RST (serum with gel)	5-6	5 min.	4000 g (RCF) for 3 min. or 2000 g (RCF) for 4 min. or alternative centrifugation conditions are available ^{3,4}
		BD SST™ II <i>Advance</i> (serum with gel)	6	30 min.	1300-2000 g (RCF) for 10 min. or 3000 g (RCF) for 5 min. at 18-25°C ³
Heparin		Lithium & sodium heparin	8-10	n/a	≤1300 g (RCF) for 10 min. at 18-25°C
		BD PST™ II (plasma with gel)	8-10	n/a	1300-2000 g (RCF) for 10 min. or alternative centrifugation conditions are available ^{3,4}
Haematology		EDTA	8-10	n/a	n/a
Crossmatch		Blood banking	8-10	n/a	≤1300 g (RCF) for 10 min. at 18-25°C
PPT		BD PPT™ EDTA with gel	8-10	n/a	1100 g (RCF) for 10 min. at 18-25°C
Trace elements		Trace elements with EDTA	8-10	n/a	≤1300 g (RCF) for 10 min. at 18-25°C
		Trace elements serum with clot activator (silica particles)	5-6	60 min.	≤1300 g (RCF) for 10 min. at 18-25°C
Glucose		Glucose	8-10	n/a	≤1300 g (RCF) for 10 min. at 18-25°C

n/a = not applicable

Centrifugation acceleration and deceleration time is not included, this must be added to the time stated.

For fixed angle rotors, a longer centrifuging time may be required for the optimal development of the gel barrier.

1. Sequence for sample taking according to Clinical and Laboratory Standards Institute (CLSI), Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard - Sixth Edition, CLSI document H3-A6 (ISBN 1-56238-650-6), Clinical and Laboratory Standards Institute, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898 USA, 2007,

2. Platelet poor plasma (< 10,000/μl)

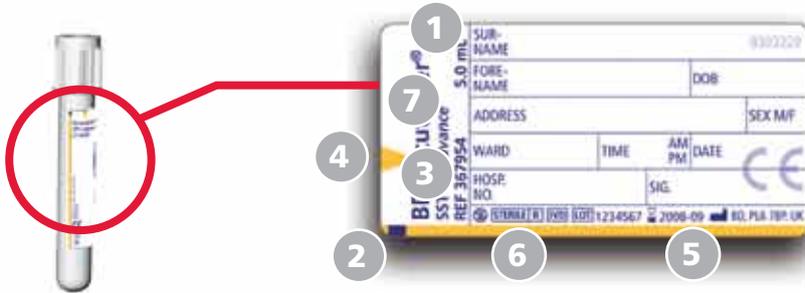
3. BD White Paper VS7228: Performance of BD Vacutainer® SST™ II *Advance* Tubes at Four and Five Minute Centrifugation Times

4. BD White Paper VS7513: Performance of BD Vacutainer® PST™ II PLUS Tubes at Four and Five Minute Centrifugation Times, 2002

Venous blood sampling

Labelling and packaging information

Labelling



- 1 Fill volume
- 2 Fill marking
- 3 BD catalogue number
- 4 BD Vacutainer® notch label - colour coding and attachment point for secondary label.
- 5 Expiry date and batch number
- 6 Sterilisation symbol
- 7 Type of tube and additive concentration (if applicable)



Paper label

Patient data can be written directly onto the white surface of the standard label.



Block label

Paper label with form for patient data.



No label

The product specifications are printed directly onto the tube. This system reduces the risk of the tubes sticking in the analyser rack due to several patient identification labels being stuck over each other on the tube. It also enables better visual inspection of the tubes.



Transparent label

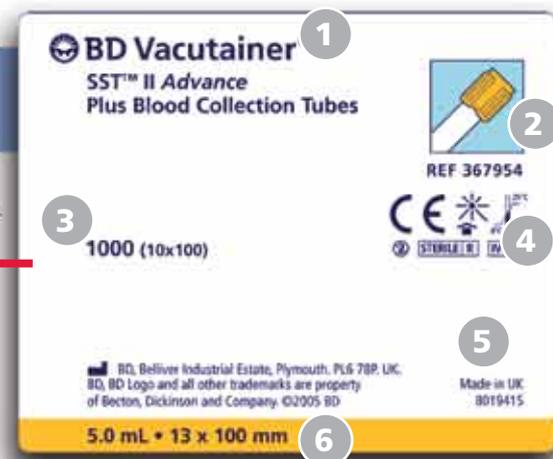
Same format as the paper label, but has the advantage that it is transparent and thus allows a better visual inspection of the tube.

Box



- 1 Type of tube and additive concentration (if applicable)
- 2 Instructions for use as pictograms
- 3 BD catalogue number
- 4 Number of tubes in the box
- 5 Expiry date and batch number
- 6 Applicable symbols
- 7 Country of origin
- 8 Volume and size of the tubes

Case



- 1 Type of tube and additive concentration (if applicable)
- 2 BD catalogue number
- 3 Number of tubes in the case
- 4 Applicable symbols
- 5 Country of origin
- 6 Volume and size of the tubes

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® 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 serum tubes from patients who have not been treated with anticoagulants is 60 minutes.

Centrifuging conditions:

≤ 1300 g for 10 minutes at 18-25°C

Studies

Studies are available on request.



BD Vacutainer® Serum tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
368493	KFK325	2	13x75	Silica (Clot Activator)	PET	Block	Hemogard™	
368975	KFK242	4	13x75	Silica (Clot Activator)	PET	Block	Hemogard™	
367837	KFK168	6	13x100	Silica (Clot Activator)	PET	Block	Hemogard™	
367895	KFK285	10	16x100	Silica (Clot Activator)	PET	Block	Hemogard™	

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

BD Vacutainer® Thrombin tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
367817	-	4.8	13x75	Thrombin	PET	Paper	Hemogard™	
367811	-	6	13x100	Thrombin	PET	Paper	Hemogard™	

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

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 evaluation of special chemistries such as therapeutic drugs, proteins, peptides, steroids and vitamins demonstrates a high degree of stability with the acrylic gel in the BD SST™ II Advance^{1,2,3}.

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 anti-coagulation treatment is 30 minutes.

Centrifugation conditions:

1300-2000 g for 10 minutes or alternatively, according to the BD study VS 7228 3000 g for 5 minutes at 18-25°C⁴.



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

Studies are available on request..



Patented separating gel technology with unique gel design.

1. BD White Paper VS7050: Therapeutic Drug Compatibility in BD Vacutainer® SST™ II Plus Tubes, 2004
2. BD White Paper VS7051: Performance of BD Vacutainer® SST™ II Plus Tubes for Special Chemistry Testing, 2004
3. BD White Paper VS5778: Comparison of BD Vacutainer® SST™ Plus Tubes with SST™ II Plus Tubes for Common Analytes, 2001
4. BD White Paper VS7228: Performance of BD Vacutainer® SST II Advance tubes at Four and Five Minute Centrifugation Times

Venous blood sampling

Serum analysis

BD Vacutainer® SST™ II *Advance* tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
366882	-	2.5	13x75	Silica (Clot Activator)/Gel	PET	Block	Hemogard™	
367956	KFK112	3.5	13x75	Silica (Clot Activator)/Gel	PET	Block	Hemogard™	
366127	KFK313	3.5	13x75	Silica (Clot Activator)/Gel	PET	Block	Hemogard™	
368968	KFK311	5	13x100	Silica (Clot Activator)/Gel	PET	Paper	Hemogard™	
367954	KFK114	5	13x100	Silica (Clot Activator)/Gel	PET	Block	Hemogard™	
367958	KFK127	8.5	16x100	Silica (Clot Activator)/Gel	PET	Block	Hemogard™	

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

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.

BD Vacutainer® Rapid Serum tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
368774	-	5	13x100	Thrombin based medical clotting agent/gel	PET	Paper	Hemogard™	

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



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. This complex inhibits thrombin and the activated factor X and thus prevents coagulation.

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.

Mixing the tube

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

Centrifugation conditions:

≤ 1300 g for 10 minutes at 18-25°C



Studies

Studies are available on request.

BD Vacutainer® Heparin tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
368495	KFK326	2	13x75	Lithium Heparin	PET	Block	Hemogard™	
367883	KFK281	4	13x75	Lithium Heparin	PET	Block	Hemogard™	
367885	KFK173	6	13x100	Lithium Heparin	PET	Block	Hemogard™	
367869	-	4	13x75	Sodium Heparin	PET	Paper	Hemogard™	
367876	KFK279	6	13x100	Sodium Heparin	PET	Paper	Hemogard™	
368480	-	10	16x100	Sodium Heparin	Glass	Paper	Conventional	

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 serum and the blood clot 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 Vacutainer® 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 evaluation of special chemistries such as therapeutic drugs, proteins, peptides, steroids and vitamins demonstrates a high degree of stability^{1,2,3}.

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

- Stable barrier between plasma and red blood 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 Vacutainer® 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. The optimum separation of sediment and plasma is achieved at a temperature of 20-25°C.

Mixing the tube

Correct mixing (8-10 inversions) of the BD Vacutainer® PST™ II tube immediately after the blood sample has been taken is extremely important to avoid microclotting.

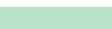
Centrifugation conditions:

1300-2000 g for 10 minutes at 18-25°C
or alternatively, according to BD study VS 7513⁴
3000 g for 5 minutes at 18-25°C

Studies

Studies are available on request.

BD Vacutainer® PST™ II tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
367373	KFK130	3	13x75	Lithium Heparin/Gel	PET	Block	Hemogard™	
367375	KFK129	4.5	13x100	Lithium Heparin/Gel	PET	Block	Hemogard™	
367377	KFK128	8	16x100	Lithium Heparin/Gel	PET	Block	Hemogard™	

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

1. BD White Paper VS5919: Comparison of BD Vacutainer® PST™ II Plastic Tubes to BD Vacutainer PST™ Plastic Tubes for 22 Routine Chemistry Analytes and 3 Cardiac (STAT) Analytes, 2003
2. BD White Paper VS5925: Analyte Stability Supports Extended Use of Plasma Collected in BD Vacutainer PST™ II Plastic Tubes, 2001
3. BD White Paper VS7597: A comparative evaluation of PST II with Lithium Heparin Plus and Serum Plus for selected hormones, therapeutic drugs, tumor markers and other chemistry analytes, 2008
4. BD White Paper VS7513: Performance of BD Vacutainer® PST™ II PLUS Tubes at Four and Five Minute Centrifugation Times, 2002

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



Studies

Studies are available on request.

BD Vacutainer® tubes for glucose and lactate determination

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
368920	KFK250	2	13x75	Fluoride/Oxalate	PET	Block	Hemogard™	
368201	KFK374	5	13x100	Fluoride/Oxalate	PET	Paper	Hemogard™	
368921	KFK409	4	13x75	Fluoride/Oxalate	PET	Paper	Hemogard™	
368520	-	2	13x75	Fluoride/EDTA	PET	Block	Hemogard™	
368521	KFK431	4	13x75	Fluoride/EDTA	PET	Block	Hemogard™	

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

Venous blood sampling

Haematology

EDTA

EDTA salts (ethylenediaminetetraacetic acid) are used to anticoagulate 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. The ICSH recommends dipotassium EDTA salt (K₂EDTA) for haematological investigation. BD Vacutainer® plastic tubes are available with spray dried K₂EDTA and K₃EDTA.

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.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
367838	KFK233	3	13x75	K ₂ EDTA	PET	Block	Hemogard™	
367839	KFK171	4	13x75	K ₂ EDTA	PET	Block	Hemogard™	
367873	KFK286	6	13x100	K ₂ EDTA	PET	Block	Hemogard™	
367525	KFK367	10	16x100	K ₂ EDTA	PET	Paper	Hemogard™	

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

BD Vacutainer® K₃EDTA tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
367836	KFK276	2	13x75	K ₃ EDTA	PET	Block	Hemogard™	
368857	KFK031	3	13x75	K ₃ EDTA	PET	Block	Hemogard™	
368860	KFK042	4	13x75	K ₃ EDTA	PET	Block	Hemogard™	

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



Studies

Studies are available on request.

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

Venous blood sampling

Coagulation analysis

Sodium citrate

Trisodium citrate is used as an anticoagulant for coagulation investigations. It works as an anticoagulant by forming 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.

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

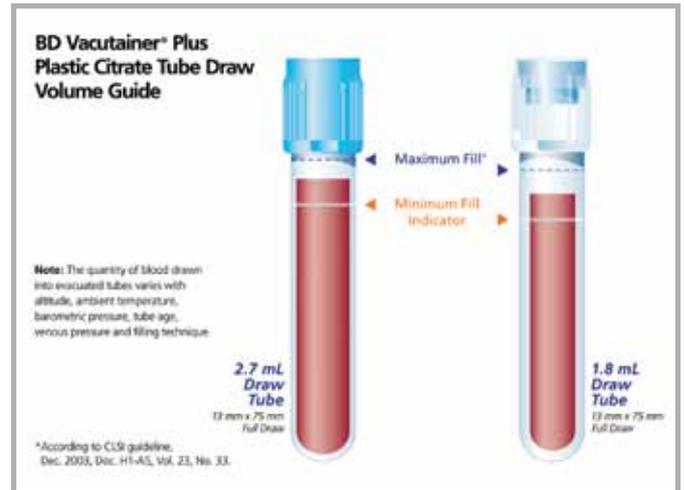
The Plus citrate tubes feature innovative tube geometry that minimises tube headspace and associated platelet activation to optimise APTT monitoring of unfractionated heparin patients.

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^{1,2}.
- Clinically proven in multi-centre clinical trials for coagulation testing across all major patient populations.
- Evaluated with the most widely used coagulation analytical systems.

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).

* 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.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
363093	KFK117	1.8	13x75	Sodium Citrate	PET	Block	Hemogard™	
363095	KFK119	2.7	13x75	Sodium Citrate	PET	Block	Hemogard™	
367691	KFK186	4.5	13x75	Sodium Citrate	Glass	Block	Hemogard™	

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.

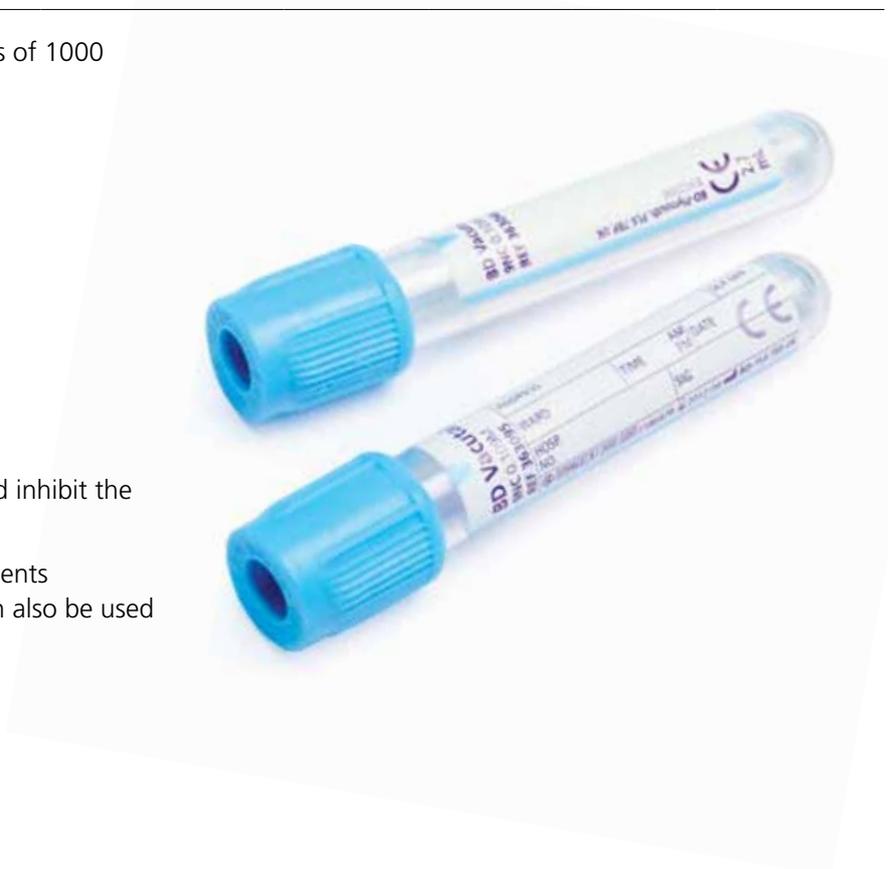
BD Vacutainer® CTAD tubes are ideal for patients undergoing anticoagulant therapy, but it can also be used for routine coagulation analysis.

Centrifugation conditions:

1500 g for 15 minutes at 18-25°C

Studies

Studies are available on request.



BD Vacutainer® CTAD tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
367562	KFK043	2.7	13x75	CTAD	Glass	Paper	Hemogard™	
367599	KFK022	4.5	13x75	CTAD	Glass	Paper	Hemogard™	

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

Venous blood sampling

Crossmatch

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



BD Vacutainer® Crossmatch tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
366164	KFK040	4	13x75	K ₂ EDTA (Spray)	PET	Crossmatch	Hemogard™	
367941	KFK277	6	13x100	K ₂ EDTA (Spray)	PET	Crossmatch	Hemogard™	
368817	KFK278	6	13x100	Silica (Clot Act)	PET	Crossmatch	Hemogard™	

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

BD Vacutainer® 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 tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
362725	-	3	13x75	No additive	PET	See through	Hemogard™	

Venous blood sampling

Trace element

Trace element determination

BD Vacutainer® tubes for the analysis of trace elements have controlled amounts of trace elements. Maximum concentrations are 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.

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.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
368380	KFK359	6	13x100	Coagulation activator	PET	Paper	Hemogard™	
368381	KFK360	6	13x100	K ₂ EDTA	PET	Paper	Hemogard™	
367735	-	7	13x100	Na Heparin	Glass	Paper	Hemogard™	

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

Blood group determination

The anti-coagulant 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/m
Citric acid	1.2 mg/mL	0.69 mg/m
Glucose	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.



BD Vacutainer® tubes for blood group determination

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
366645	-	8.5	16x100	ACD Solution A	Glass	Paper	Conventional	
367756	KFK294	6	13x100	ACD Solution B	Glass	Paper	Hemogard™	

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

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 correction.²

Enhanced User Safety

- The BD Sedi-20 and BD Sedi-40, in combination with the BD Seditainer™ tube (Cat. No. 366673), 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

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

BD Sedi-20 and BD Sedi-40 instruments

Cat No.	Description	Pack quantity
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.

Venous blood sampling

ESR

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

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
366673	KFK219	1.8	8x100	Sodium Citrate	Glass	Block	Conventional	Black

BD Seditainer™ System

The BD Seditainer™ tubes are designed for ESR determination without the use of sedimentation pipettes. The blood is taken directly into the BD Seditainer™ tubes and mixed by inversion 8-10 times. Immediately before the tubes are placed in the BD Seditainer™ manual ESR 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.



BD Vacutainer® Seditainer™ tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
366671	KFK013	5	10.25x120	Sodium Citrate	Glass	Block	Hemogard™	Black
366690	KFK198	5	10.25x120	Sodium Citrate	Glass	Block	Conventional	Black

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

BD Vacutainer® Seditainer™ Manual ESR stand

Cat No.	NHS code	Description	Quantity
366016	-	BD Seditainer™ Manual ESR Stand	1

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 15 million PBMCs can be isolated within 20 minutes. The BD CPT™ tube enables:

- **Improved sample preparation yield and consistency**
 - Standardised process when compared to manual FICOLL™ gradient separations
 - Improved 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**
 - Reduced 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

Studies are available on request.

Centrifuging conditions:

1500-1800 g for 15 minutes at 18-25°C

BD Vacutainer® CPT™ tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
362781	-	4	13x100	Sodium Citrate/FICOLL™	Glass	See through	Conventional	
362782	-	8	16x125	Sodium Citrate/FICOLL™	Glass	See through	Conventional	
362780	-	8	16x125	Sodium Heparin/FICOLL™	Glass	See through	Conventional	

*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 blood samples 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.

- **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
- 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 for *in vitro* diagnostic use.



Studies

Studies are available on request.

Centrifuging conditions:

1100 g for 10 minutes at 18-25°C

BD Vacutainer® PPT™ tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
362795	-	5	13x100	K ₂ EDTA/Gel	Plastic	See through	Hemogard™	<input type="text"/>
362799	-	8.5	16x100	K ₂ EDTA/Gel	Plastic	See through	Hemogard™	<input type="text"/>

All tubes are supplied in cases of 100

Cell and biomarker preservation

PAXgene® Blood RNA System

PAXgene® Blood RNA System

The PAXgene® Blood RNA tube is a development of PreAnalytiX, the joint venture between QIAGEN and BD. The PAXgene® Blood RNA system consists of the PAXgene® Blood RNA tube and PAXgene® Blood RNA kits available from QIAGEN.

The PAXgene® Blood RNA tube contains a proprietary reagent that immediately stabilises all intracellular RNA (mRNA and sRNA). The PAXgene® RNA tube ensures:

- **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).

- **RNA yield**

The yield, dependent upon the sample, is $\geq 3 \mu\text{g}$ for >95% of the samples (healthy subjects with a leukocyte count of $4.8 - 11 \times 10^9/\text{mL}$).

- **RNA quality**

The A_{260}/A_{280} quotient is 1.8-2.2 for 95% of all samples. Genomic DNA contamination is $\leq 1\%$ in $\geq 95\%$ of all samples.

- **Stabilisation of 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.



For more information please visit www.PreAnalytiX.com.

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

Studies

Studies are available on request.

PAXgene® Blood RNA tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
762165	-	2.5	16x100	Proprietary	Plastic	Paper	Hemogard™	<input type="text"/>

All tubes are supplied in cases of 100

Cell and biomarker preservation

PAXgene® Blood DNA System

PAXgene® Blood DNA System (IVD)

The PAXgene® Blood DNA system (IVD) is a development of PreAnalytiX, the joint venture between QIAGEN and BD. The performance of the PAXgene® Blood DNA system 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 $\geq 12.5\text{ng DNA}/\mu\text{l}$ 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 tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
761115	-	8.5	16x100	DNA/K ₂ EDTA	Plastic	Paper	Hemogard™	

All tubes are supplied in cases of 100



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 system (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 K₂EDTA anticoagulant and 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 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

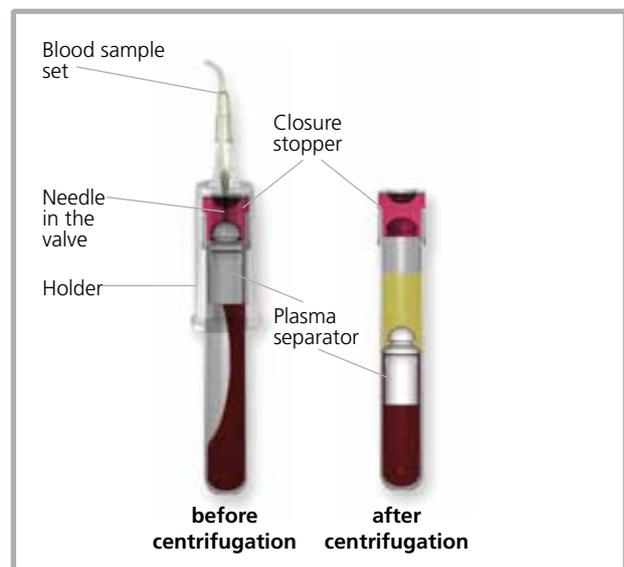
1100 g for 30 min.

The BD™ P100 plasma protein tube is 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

Studies are available on request.

Mechanical plasma separator



BD™ P100 tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
366448	-	8.5	16x100	K ₂ EDTA/Protease Inhibitor	PET	Paper	Hemogard™	<input type="text"/>

All tubes are supplied in boxes of 24



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.

The BD™ P700 tube is 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 tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
366473	-	3.0	13x75	K ₂ EDTA/Proprietary DPP-IV Protease Inhibitor Cocktail	PET	Paper	Hemogard™	

All tubes are supplied 10 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

Studies

Studies are available on request.

The BD™ P800 tube is 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.

Stability

The stability of the peptides in BD™ P800 tubes in comparison to BD 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
GIP (1-42)	~ 5	> 96
Ghrelin	~ 15	> 48-72
Glucagon	~ 5-15	> 48



BD™ P800 tubes

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour
366420	-	2.0	13x75	K ₂ EDTA/Protease, Esterase and DPP-IV Inhibitor	PET	Paper	Hemogard™	
366421	-	8.5	16x100	K ₂ EDTA/Protease, Esterase and DPP-IV Inhibitor	PET	Paper	Hemogard™	

All tubes are supplied in cases of 100

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.	NHS code	Size	Needle length	Colour code	Box/case
368609	KFK217	21G (0.8mm)	32mm		48/480
368610	KFK216	22G (0.7mm)	32mm		48/480

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.	NHS code	Size	Needle length	Colour code	Box/case
368650	KFK351	21G (0.8mm)	32mm		100/1000
368651	KFK352	22G (0.7mm)	32mm		100/1000

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 with integrated holder

Cat No.	NHS code	Size	Length	Colour code	Box/case
368835	KFK517	21G (0.8mm)	32mm		50/400
368836	KFK518	22G (0.7mm)	32mm		50/400

BD Vacutainer® Eclipse™ Signal™ blood collection needles

Cat No.	NHS code	Size	Length	Colour code	Box/case
368837	-	21G (0.8mm)	32mm		50/400
368838	-	22G (0.7mm)	32mm		50/400



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

Cat No.	NHS code	Size	Needle length	Length of tube	Luer adapter	Colour coding	Box/case
367326	-	21G (0.8mm)	19mm	305mm	None		50/200
367324	-	23G (0.6mm)	19mm	305mm	None		50/200
367323	-	25G (0.5mm)	19mm	305mm	None		50/200
367338	KFK324	21G (0.8mm)	19mm	178mm	With		50/200
367336	KFK323	23G (0.6mm)	19mm	178mm	With		50/200
367335	-	25G (0.5mm)	19mm	178mm	With		50/200
367344	KFK363	21G (0.8mm)	19mm	305mm	With		50/200
367342	KFK366	23G (0.6mm)	19mm	305mm	With		50/200
367341	-	25G (0.5mm)	19mm	305mm	With		50/200

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.	NHS code	Size	Needle length	Length of tube	Colour coding	Box/case
367355	-	21G (0.8mm)	19mm	178mm		20/100
367354	-	23G (0.6mm)	19mm	178mm		20/100
367353	-	25G (0.5mm)	19mm	178mm		20/100
368657	-	21G (0.8mm)	19mm	305mm		20/100
368658	-	23G (0.6mm)	19mm	305mm		20/100
367356	-	25G (0.5mm)	19mm	305mm		20/100

Safety 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

Cat No.	NHS code	Size	Needle length	Length of tube	Luer adapter	Colour coding	Box/case
367246	-	21G (0.8mm)	19mm	305mm	None		50/200
367247	-	23G (0.6mm)	19mm	305mm	None		50/200
368383	-	25G (0.5mm)	19mm	305mm	None		50/200
367282	KFK253	21G (0.8mm)	19mm	178mm	With		50/200
367286	KFK056	21G (0.8mm)	19mm	305mm	With		50/200
367284	KFK254	23G (0.6mm)	19mm	178mm	With		50/200
367288	KFK058	23G (0.6mm)	19mm	305mm	With		50/200
367295	KFK336	25G (0.5mm)	19mm	178mm	With		50/200

Safety 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.	NHS code	Size	Needle length	Length of tube	Colour coding	Box/case
368654	KFK348	21G (0.8mm)	19mm	178mm		25/200
368652	KFK347	21G (0.8mm)	19mm	305mm		25/200
368655	KFK350	23G (0.6mm)	19mm	178mm		25/200
368653	KFK349	23G (0.6mm)	19mm	305mm		25/200

Accessories

Adapter and holder

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

- 1 The BD Vacutainer® Blood Transfer Device 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.
- 2 The BD Vacutainer® Luer-Lok™ Access Device 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.
- 3 BD Vacutainer® single-use holders 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.



- 4 BD Vacutainer® Luer adapters are sterile devices with a multi-sampling valve and are designed for use with a catheter to collect blood with BD Vacutainer® blood collection tubes. They are also ideal for use with any female luer fitting.

BD Vacutainer® Luer adapter

Cat No.	NHS code	Description	Colour coding	Box/case
367300	KFK036	BD Vacutainer® Luer adapter		100/1000

BD Vacutainer® single use holder

Cat No.	NHS code	Description	Box/case
364815	KFK037	BD Vacutainer® single use plastic holders for tubes with 13mm and 16mm diameter and for BD Bactec™ blood culture bottles, transparent white	250/1000

BD 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.	NHS code	Description	Colour	Box/case
364902	KFK439	Luer-Lok™ Access Device (“male Luer”)		100/200
364810	KFK438	Blood Transfer Device (“female Luer”)		100/200

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



Tourniquet

Cat No.	NHS code	Description	Box/case
367204	FWJ009	Single use tourniquet, latex-free, 25 tourniquets in one packaging unit, perforated for separation without other equipment	25/500

Collection tray

Cat No.	NHS code	Description	Box/case
368697	KFK001	Blood collection tray (holds up to 80 tubes)	21

DIFF-SAFE®

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

Blood dispenser

Cat No.	NHS code	Description	Colour coding	Box/case
366005	KEV016	DIFF-SAFE** for differential count		100/1000

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

BD™ Biological Specimen Transportation System

BD™ Biological Specimen Transportation System

BD™ Biological Specimen Transportation System provides a complete range of transportation Specimen Containment boxes to satisfy the requirements of most laboratories.

It also includes the BD™ T&T data logger system to measure the transportation time and temperature of your specimens from collection to the laboratory for analysis.

Large number of samples

Tube racks



Secondary containers



Tertiary containers



Small number of samples

Hemobox 4



BD™ T&T system

The BD™ T&T system is designed to monitor critical variables (time and temperature) during the transportation of diagnostic specimens and comprises:

TempStick®: A battery powered miniaturised data logger that records time and temperature at predetermined intervals.

BD™ Mission Starter: A hand-held device that activates the Tempstick® data logger with parameters required for a particular specimen collection.

BD™ System Manager: Captures data from the Tempstick® data logger and transfers it to the computer and is used to program the BD Mission Starter with a USB interface.



Assured compliance with International regulations

BD 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) 2013 including packaging instructions P650 for UN 3373 specimens
- IATA DGR International Air Transport Association Dangerous Good Regulations

Please contact your local BD office for more details.

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.

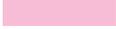
Its intuitive handling requires minimum training. The lancet is activated by being pressed onto the sampling location. The sharp point then retracts automatically into the housing.

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.



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

BD Microtainer® Contact-Activated Lancets

Cat No.	NHS code	Piercing width and depth	Blood volume	Colour	Box/case
366592	FTM107	30G x 15mm	One drop		200/2000
366593	FTM108	21G x 1.8mm	Medium blood flow		200/2000
366594	FTM110	21G x 1.5mm	Large blood flow		200/2000

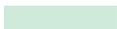
Heelstick sampling

The BD Microtainer® QuikHeel™ safety single-use incision lancet is for taking capillary blood samples from the heels of premature and new-born 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 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.	NHS code	Description	Piercing depth	Piercing width	Colour	Box/case
368102	FTM034	Incision lancet for premature babies	0.85mm	1.75mm		50/200
368103	FTM035	Incision lancet for newborn babies and infants	1mm	2.5mm		50/200

1. BD Clinical White Paper V57499 – 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.

Capillary blood sampling

BD Microtainer® MAP tubes

Process optimisation for capillary blood samples

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

- The first capillary blood tube with standard blood collection tube 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).
- A standard label can be attached directly to the sample, minimising the risk of misidentification due to missing or incomplete labelling.



- Easy to open with twist locking mechanism that ensures no leakage.
- Colour marking for identification of the type of sample and the correct positioning of the patient label.

BD Microtainer® MAP tube

Cat No.	NHS code	Description	Closure	Cap colour	Box/case
363706	KFK430	EDTA tube for blood profile analysis with 1.0 mg K ₂ EDTA, dimensions 13 x 75mm	Microgard™		200/200



Capillary blood sampling

BD Microtainer® tubes

BD Microtainer®

BD Microtainer® tubes are for collection, 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 anti-coagulant ratio.

BD Microgard™ closure

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

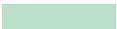
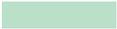
A larger diameter facilitates handling of the tube.

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

Fill volume

Haematology tubes:	250–500 µl
Serum tubes, without additive:	according to requirement
Serum tubes, without separating gel:	according to requirement
Serum tubes, with separating gel and UV protection:	according to requirement
Plasma tubes:	200-400 µl
Plasma tubes with separating gel:	400-600 µl
Glucose tubes:	400-600 µl

BD Microtainer® tubes with Microgard™ closure

Cat No.	NHS code	Description	Closure	Cap colour	Box/case
365964	KCM058	Serum tubes with coagulation activator	Microgard™		200/200
365968	KCM059	Serum tubes with separating gel	Microgard™		200/200
365979	KCM060	Serum tubes with separating gel and UV protection (coloured for sensitive tests e.g. bilirubin)	Microgard™		200/200
365966	KCM062	Plasma tubes with lithium heparin	Microgard™		200/200
365986	KCM063	Plasma tubes with separating gel and lithium heparin	Microgard™		200/200
365988	KCM064	Plasma tubes with separating gel, lithium heparin and UV protection (coloured for sensitive tests e.g. bilirubin)	Microgard™		200/200
365975	KCM002	EDTA tubes for blood profile analysis with 0.8 mg K ₂ EDTA	Microgard™		200/200
365993	KCM067	Glucose tubes with sodium fluoride and Na ₂ EDTA	Microgard™		200/200
368933	KFK312	BD Microtainer® tube extender for attachment to all BD Microtainer® tubes with Microgard™ closure (10mm diameter)			50/200

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.	NHS code	Syringe volume (mL)	Recommended fill volume (mL)	Units of heparin* (IU)	Gauge	Needle length	Connection	Closure cap
364356	FWC082	1	0.6	30	-	-	Luer	-
364378	FWC084	3	1.6	80	-	-	Luer-Lok™	Hemogard™
364376	FWC085	3	1.6	80	-	-	Luer	-

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 venous or arterial whole blood. The syringe plunger can be preset to the recommended volume. As arterial blood fills the syringe, the residual air is expelled through the self-venting membrane.

BD Preset™ blood gas syringes without needle

Cat No.	NHS code	Syringe volume (mL)	Recommended fill volume (mL)	Units of heparin* (IU)	Gauge	Needle length	Connection	Closure cap
364416	FWC086	1	0.6	30	-	-	Luer	-
364316	FWC091	3	1.6	80	-	-	Luer-Lok™	Hemogard™

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.	NHS code	Syringe volume (mL)	Recommended fill volume (mL)	Units of heparin* (IU)	Gauge	Needle length	Connection	Closure cap
364390	FWC094	3	1.6	80	22G (0.7mm) BD Eclipse™	25mm	Luer-Lok™	Hemogard™
364391	FWC095	3	1.6	80	23G (0.6mm) BD Eclipse™	25mm	Luer-Lok™	Hemogard™
364393	FWC197	3	1.6	80	25G (0.5mm) BD Eclipse™	25mm	Luer-Lok™	Hemogard™

* Spray dried, calcium balanced lithium heparin

Syringes supplied in cases of 100

Studies

Studies are available on request.

Urine collection products

BD Vacutainer® urine collection system

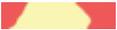
BD Vacutainer® urine collection system is a standardised and hygienic system that can be used right where the sample is taken. It provides both patient and user with the advantages of a closed system that will provide reliable diagnostic results.

For urinalysis, BD offers a wide range of tube 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 tube volumes for all patient types with boric acid based preservative tubes, all clinically validated for 48 hour specimen stability at room temperature^{1,2,3}. 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.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour	Box/case
364938	-	10	16x100	Without additive	PET	Paper	Conventional		100/1000
364992	-	8	16x100	Stabiliser* mercury free	PET	Paper	Conventional		100/1000
365000	-	9.5	16x100	Without additive	PET	Paper	Hemogard™		100/1000
368501	-	6	13x100	Without additive	PET	Paper	Hemogard™		100/1000
368500	KFK410	4	13x75	Without additive	PET	Block	Hemogard™		100/1000
364915	KFK391	11	16x100	Without additive	PET	Block	Hemogard™		100/1000
365017	-	8	16x100	Stabiliser* mercury free	PET	Paper	Hemogard™		100/1000

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

1. Kouri T, Vuotari L, Pohjavaara S, Laippala P. Preservation of Urine for Flow Cytometric and Visual Microscopic Testing. Clin. Chem., Jun 2002; 48: 900-905
 2. BD White Paper VS7097: Evaluation of BD Vacutainer® Urine Culture & Sensitivity PLUS Tube vs. Refrigerated BD Vacutainer® Non-Additive PLUS Tube for Microbiological Testing - Seeded Urine, 2003
 3. BD White Paper VS7099: Evaluation of BD Vacutainer® Urine Culture & Sensitivity PLUS Tube vs. BD Vacutainer® Urine Culture & Sensitivity Glass Tube for Microbiological Testing - Patient Urine, 2003

Urine collection products

BD Vacutainer® urine tubes for microbiology

Cat No.	NHS code	Volume (mL)	Size (mm)	Specification	Material	Label	Closure cap	Cap colour	Box/case
364969	-	6	13x100	Stabiliser**	Glass	Paper	Hemogard™		100/1000
364958	-	4	13x75	Stabiliser**	PET	Paper	Hemogard™		100/1000
364955	KFK520	10	16x100	Stabiliser**	PET	Paper	Hemogard™		100/1000
364944*	-	10	16x100	Stabiliser**	PET	Paper	Hemogard™		50/200
364959*	-	4	13x75	Stabiliser**	PET	Block	Hemogard™		50/200

* Includes urine transfer straw

** 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.	NHS code	Description	Box/case
364941	KFK411	Polypropylene urine beaker with screw closure and integrated transfer unit, capacity 120mL, internally sterile	200/200
364982	KFK390	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	40/40
364940	KFK392	Specimen transfer straw	100/1000

Studies

Studies are available on request.

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. 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"



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

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

BSI - EC Certificate CE00362

Additional information

   The CE mark, signifying compliance with the European IVD MD Directive, 98/79/EC or the MD Directive 93/42/EEC.			
 REF	Catalogue or re-order number	 LOT	Lot number or batch number
	Use by, expires		Use once or do not reuse
 STERILE	Sterilised by moist heat	 STERILE R	Sterilised by irradiation
	"Caution" - consult instructions for use for important cautionary information	 STERILE EO	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	 SN	Serial number
	Latex free		Keep dry
	Manufacturer	 IVD	<i>In vitro</i> diagnostic medical device
	Consult instructions for use	 EC REP	Authorised representative in the EU community

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

Becton Dickinson UK Limited General Conditions of Sale

For General Conditions of Sale, please refer to www.bdeurope.com/uk.

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<u>364940</u>	<u>45</u>	<u>367341</u>	<u>32</u>	<u>368653</u>	<u>35</u>
<u>364941</u>	<u>45</u>	<u>367342</u>	<u>32</u>	<u>368654</u>	<u>35</u>
<u>364944</u>	<u>45</u>	<u>367344</u>	<u>32</u>	<u>368655</u>	<u>35</u>
<u>364955</u>	<u>45</u>	<u>367353</u>	<u>33</u>	<u>368657</u>	<u>33</u>
<u>364958</u>	<u>45</u>	<u>367354</u>	<u>33</u>	<u>368658</u>	<u>33</u>
<u>364959</u>	<u>45</u>	<u>367355</u>	<u>33</u>	<u>368697</u>	<u>37</u>
<u>364969</u>	<u>45</u>	<u>367356</u>	<u>33</u>	<u>368774</u>	<u>13</u>
<u>364982</u>	<u>45</u>	<u>367373</u>	<u>15</u>	<u>368817</u>	<u>20</u>
<u>364992</u>	<u>44</u>	<u>367375</u>	<u>15</u>	<u>368835</u>	<u>31</u>
<u>365000</u>	<u>44</u>	<u>367377</u>	<u>15</u>	<u>368836</u>	<u>31</u>
<u>365017</u>	<u>44</u>	<u>367525</u>	<u>17</u>	<u>368837</u>	<u>31</u>
<u>365964</u>	<u>41</u>	<u>367562</u>	<u>19</u>	<u>368838</u>	<u>31</u>
<u>365966</u>	<u>41</u>	<u>367599</u>	<u>19</u>	<u>368857</u>	<u>17</u>
<u>365968</u>	<u>41</u>	<u>367691</u>	<u>19</u>	<u>368860</u>	<u>17</u>
<u>365975</u>	<u>41</u>	<u>367735</u>	<u>21</u>	<u>368920</u>	<u>16</u>
<u>365979</u>	<u>41</u>	<u>367756</u>	<u>21</u>	<u>368921</u>	<u>16</u>
<u>365986</u>	<u>41</u>	<u>367811</u>	<u>11</u>	<u>368933</u>	<u>41</u>
<u>365988</u>	<u>41</u>	<u>367817</u>	<u>11</u>	<u>368968</u>	<u>13</u>
<u>365993</u>	<u>41</u>	<u>367836</u>	<u>17</u>	<u>368975</u>	<u>11</u>
<u>366005</u>	<u>37</u>	<u>367837</u>	<u>11</u>	<u>761115</u>	<u>27</u>
<u>366016</u>	<u>23</u>	<u>367838</u>	<u>17</u>	<u>762165</u>	<u>26</u>
<u>366127</u>	<u>13</u>	<u>367839</u>	<u>17</u>		

BD Vacutainer® Blood Collection Tubes

Catalogue numbers at a glance

Type	Additive	Size mm	1.8mL	2mL	2.5mL	2.7mL	3mL	3.5mL	4mL	4.5mL	4.8mL	5mL	6mL	8mL	8.5mL	10mL
Serum	Clot Activator (Silica Particles)	13 x 75		368493					368975							
		13 x 100											367837			
		16 x 100														
BD SST™ II	Clot Activator (Silica Particles) with Gel	13 x 75			366882			367956								
		13 x 100						366127					368968			
		16 x 100											367954			
Thrombin	Thrombin	13 x 75									367817					
		13 x 100												367811		
RST	Thrombin with Gel	13 x 100										368774				
Plasma	Li Heparin	13 x 75		368495					367883							
	Na Heparin							367869								
	Li Heparin	13 x 100											367885			
	Na Heparin												367876			
	Na Heparin	16 x 100														368480*
BD PST™ II	Li Heparin with Separating Gel	13 x 75					367373									
		13 x 100								367375						
		16 x 100												367377		
Blood Profile/ Haematology	K ₂ EDTA	13 x 75					367838		367839							
		13 x 100											367873			
		16 x 100														367525
	K ₃ EDTA	13 x 75		367836			368857		368860							
Coagulation	0.109 M Na Citrate	13 x 75	363093			363095										
	0.105 M Na Citrate	13 x 75								367691*						
	CTAD	13 x 75				367562*				367599*						
Glucose and Lactate	Na Fluoride K ₂ EDTA	13 x 75		368520					368521							
	Na Fluoride K Oxalate	13 x 75		368920					368921							
	Na Fluoride K Oxalate	13 x 100										368201				
Crossmatch	EDTA	13 x 75							366164							
		13 x 100											367941			
	Serum	13 x 100											368817			
Trace Element	Clot Activator	13 x 100												368380		
	K ₂ EDTA												368381			
Blood Group	ACD Solution B	13 x 100											367756*			
	ACD Solution A	16 x 100													366645*	
Secondary or Disposable Tube	None	13 x 75					362725									
ESR	ESR	8 x 100	366673*													
		10.25 x 120											366671*			
		10.25 x 120											366690*			

* Glass tube

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