



BD Vacutainer® Unique Specimen Identifier - (USI) Barcode labelled tubes





Over **60%** of laboratory errors occur during the preanalytical phase.¹



Patient identification errors are a type of preanalytical error, with **56%** due to problems with primary specimen labelling.^{1,2}



Patient identification error consequences include incorrect, delayed and/or lack of treatment which may cause injury, disability, death, longer lengths of stay, and higher healthcare costs, as well as other patient harm and diverted resources.³



The introduction of a bar code-based positive patient identification system during blood collection has been shown to significantly reduce specimen identification errors.⁴

BD Unique Specimen Identifier (USI)

Lab system ready 1D barcode

Provides a robust standard for laboratory equipment to process the samples

Unique serialised tube number (as in 2D)*

- Tube type: first 2 digits
- Serial number: digit 3 to 12

GS1 Compliant 2D code

2D datamatrix provides full supply information in an accessible format including solutions

- Global trade identifier number (GTIN)
- Expiry date
- Lot number
- Unique serialised tube number



*Considering the most sold references, the 1D serial uniqueness is guaranteed for at least 50 years in the scenario that only USI tubes are used in the region. The 2D data uniqueness is guaranteed by the crossing of 4 individual data points.

The USI Label – contents

Tube Type ID

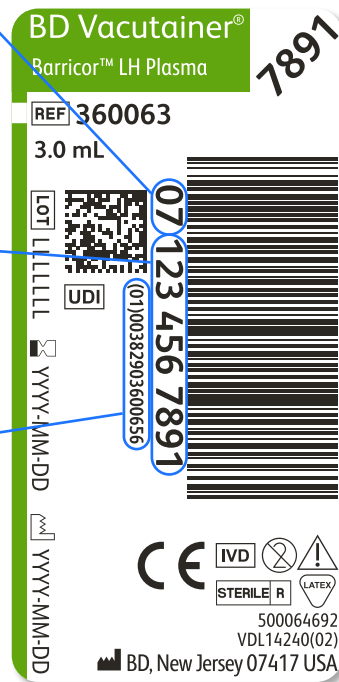
First two digits of the 1D barcode identify the tube reference in a BD lookup table (IFU)

Sample ID

10 digits identify the tube within the tube reference: 10 billion combinations

Connected Data

The unique serial encoded in the 1D barcode is the same as in position (21) in the 2D Data Matrix



- Harmonised to an internationally recognised standard (GS1 Gold Standard Format)
- 1D and 2D features adding efficiency and reducing costs
- Supply information on the label improves process effectiveness in specimen collection
- Specimen management and laboratory processes can be adapted to the label design
- Unique* tube identification (including supply information)
- Sequence sustainability: GTIN and serial guarantee – overlap avoidance

GS1 is a globally standardised and harmonised system that complies with UDI (Unique Device Identification) requirement that allows complete sample traceability, under EU Medical Device Regulation 2017/745 and 2017/746

4-digit emphasis for easier manual searching

Help remediation

- The last four digits of the tube serial number are emphasised for easy readability, enabling remediation



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Current blood and urine blood collection tube portfolio

Blood Collection Tubes

	Family Name	Availability
	Sodium Citrate	3 options
	Serum with Clot Activator	4 options
	BD SST™ II Advance	6 options
	BD Barricor™	4 options
	Lithium and Sodium Heparin	5 options
	BD PST™ II	3 options
	Glucose	4 options
	K ₂ EDTA	5 options
	Trace Elements	2 options
	Other tubes	3 options

Urine Collection Tubes

	Family Name	Availability
	Culture and Sensitivity	2 options
	Urinalysis Preservative	1 option
	Plain tubes	4 options



References:

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2. Valenstein ON, Raab SS, Walsh MK. Identification errors involving clinical laboratories: a College of American Pathologists Q probes study of patient and specimen identification errors at 120 institutions. Arch Pathol Lab Med 2006;130:1106-13.
3. Snyder SR, Favoretto AM, Derzon JH, et al. Effectiveness of barcoding for reducing patient specimen and laboratory testing identification errors: a Laboratory Medicine Best Practices systematic review and meta-analysis. Clin Biochem. 2012;45(13-14):988-998.
4. Aileen P. Morrison, Milenko J. Tanasijevic, Ellen M. Goonan, Margaret M. Lobo, Michael M. Bates, Stuart R. Lipsitz, David W. Bates, Stacy E.F. Melanson, Reduction in Specimen Labeling Errors After Implementation of a Positive Patient Identification System in Phlebotomy, American Journal of Clinical Pathology, Volume 133, Issue 6, June 2010, Pages 870-877.

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