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## ISBT 128 Labelling Standard for Blood Components

### Data Identifiers and Data Structures



## ISBT 128 Technology Standard

- Much more than a new label layout
- Provides standard information and layout for blood component labels
- Defines data structure for information appearing on labels
- Defines technical details for the bar code
- Technical Specifications document available on ICCBBA website

## ISBT 128 Data Structures

- Data structures define the way information is presented
  - Product code and unit number are just two of many standard ISBT 128 data structures
- Each data structure consists of data identifiers and data content.
- When data appears in bar code format the data content characters are printed in eye readable format immediately beneath the bar code

## ISBT 128 Data Structures

- All ISBT 128 data structures have been designed with process control and future growth in mind
- Data structure can be incorporated into many information delivery systems e.g. bar codes, electronic messages, RFID tags (i.e. not restricted to Code 128 bar code symbology)

## ISBT 128 Data Identifiers

- Data identifiers define the type of information the bar code contains (e.g. Product Code, ABO/Rh Blood Group)
- Each bar code on a blood product will begin with 2 data identifier characters (except Donation Number)
- The first character will always be “=” or “&”. By international agreement, these characters specify an ISBT 128 data structure
- Reduces error since data cannot be entered into an incorrect field

## ISBT 128 Data Structures

- The data structures and identifiers to be used by Canadian Blood Services are summarized in this presentation
- Refer to the current version of the *ISBT 128 Standard Technical Specification* at [ICCBBA.org](http://ICCBBA.org) for a complete description of all the ISBT 128 data structures and identifiers.

## Data Identifiers for Bar Codes

- List of Data Identifiers for ISBT 128 bar codes that will appear on Canadian Blood Services labels:

=	Donation Number
=%	Blood Group (ABO/Rh)
=<	Product Code
&*	Collection Date and Time
&}	Production Date and Time
&>	Expiration Date & Time
=\	Special Testing: Red Cell Antigen
&(	Special Testing: General

## ISBT 128 Data Structures

- List of ISBT 128 Data Structures to be used by Canadian Blood Services:

001	Donation Number
002	Blood Groups
003	Product Code
005	Expiration Date and Time
007	Collection Date and Time
009	Production Date and Time
010	Special Testing: General
012	Special Testing: Red Blood Cell Antigens - General

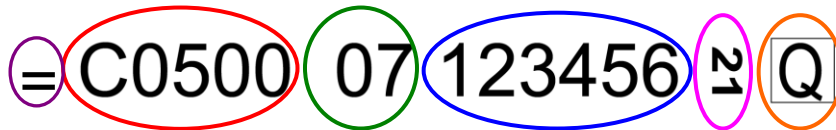
# Donation Number

## ISBT 128 Data Structure 001

## Donation Number Data Structure 001

=✂ppppyynnnnnnff	
=	Data identifier
✂pppp	Facility Identification Number (including country identifier)
yy	Year of Collection
nnnnnn	Serial Number
ff	Flag Character (NOT part of Donation Number)

## ISBT 128 Donation Number



- 13 Digit Donation Number
  - Facility identification number (global)
  - Year indicator (won't repeat for 100 years)
  - Sequential number (999,999/facility/year)
- Additional elements – NOT part of Donation Number
  - Flag characters
  - Manual entry check character (Eye readable only)
  - Data Identifier (Bar code only)

## Donation Number – Flag Characters

- Flag characters are NOT part of the Donation Number
- Are used for process control
- Will NOT be the same on component label as on label applied at collection or what is printed on packing slips
- Are encoded in the bar code and printed on labels and reports

## Keyboard Entry Check Character

- Keyboard entry into computer system should be strongly discouraged.
- When keyboard entry is necessary, computer software should be designed to recognize manual entry and require entry of Check Character for verification of data entered.
- Check character required for manual entry of long numbers (e.g., donation number and red cell antigen testing)
- Not in the bar code because it's meant to check KEYBOARD entry

## Manual Transcription - Donation Number

- A minimum of the 13 digit donation number is required for traceability of the component
  - Same 6 digit serial number may be used by all CBS blood collection sites in same year.
  - Must have 5 digit facility identifier and 2 digit year to make donation number unique and traceable back to the donor.
  - Recording of flag characters and manual check character is optional.

# Blood Groups

## ISBT 128 Data Structure 002

## Blood Groups Data Structure 002

**=%ggre**

- =%** Data identifier
- gg** ABO & Rh blood group and type of donation or collection information
- r** Optional. If used provides Rh, Kell phenotype as part of blood group structure
- e** Reserved for future use. Value always set to 0 (zero)

## Blood Groups – Data Structure 002

- Coding for ABO, Rh & Type of Donation
    - ISBT 128 Technical Specification, Table 5
    - Donation Types used by Canadian Blood Services
      - Default/Not Specified (Volunteer Homologous Donations)
      - Directed (Dedicated/Designated) Collection Use Only
      - For Autologous Use Only
      - For Autologous Use Only/Biohazard
  - Data Structure 002 Tables NOT used by Canadian Blood Services
    - Special Messages (Table 6)
    - Coding and Interpretation for Rh, Kell, Mi<sup>a</sup>/Mur Phenotypes (Table 7)
- Note: Table 7 is used by Héma-Québec*

## Blood Groups

- Barcode indicates donation type (e.g. Autologous, Directed) as well as ABO/Rh, e.g.
  - O Positive, Use not specified – 5100
  - O Positive, Autologous Use Only – 5300
  - O Positive, Directed Use Only - 4900
- Rh not required for plasma components
  - ABO Group only will be encoded in barcode and printed on labels, e.g.
    - O, Use not specified – 5500
    - A, Use not specified - 6600
- Rh of Pooled Platelets
  - Will be labelled as Rh positive if “mixed” Rh in pool

# Product Code

## ISBT 128 Data Structure 003

## ISBT 128 Product Codes & Definitions

- Product Code Database maintained by ICCBBA. All products distributed nationally/internationally must have a standard ISBT 128 product code.

## Product Code Data Structure 003

**=<αoooootds**

=<	Data identifier
αoooo	Product code
t	Donation type (e.g. Volunteer, Directed)
d	Divisions A0, B0,
s	Second level divisions Ba, Bb, Bc

## ISBT 128 Product Codes & Definitions

- 8 digit product code data structure includes donation type and allows for definition of additional information
- 5 digit 'core' product code which defines
  - Core conditions – e.g. anticoagulant, volume, storage conditions
  - Component Class - e.g. Red Blood Cells, Platelets
  - Modifiers – e.g. washed, thawed
  - Attributes – e.g. irradiated, residual white count, low platelet count
- 3 digits define donation type and divisions/splits

## Example of ISBT 128 Product Code

- Component Class: Red Blood Cells
- Modifier: None
- Core Conditions
  - Anticoagulant CPD, SAGM Added
  - original volume 500 ml
  - storage conditions refrigerated
- Attributes: Irradiated  
Leukoreduced

ISBT PRODUCT CODE = E6051

## Type of Donation

### 6th Character

- Sixth character identifies donation type

E6051V00

V = Volunteer Donor\*

1= Autologous Use Only

2= Directed Use Only

X= Autologous Biohazard

\* Volunteer homologous (allogeneic) donation (default)

## Divisions/Splits

E6051V00 (Original product)

RED BLOOD CELLS/CPD>SAGM/from 500 mL whole blood/refrig

E6051VA0 (Divided from original –e.g. pediatric)

RED BLOOD CELLS/CPD>SAGM/from 500 mL whole blood/refrig/Divided

E6051VAa (Divided from first level division (e.g. syringe)

RED BLOOD CELLS/CPD>SAGM/from 500 mL whole blood/refrig/Divided



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## Product Codes – Codabar vs ISBT 128

No one to one relationship between Codabar & ISBT 128.

<b>Codabar ‘Core’ Product Code</b>	<b>E6051</b>
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### ISBT 128 Product Codes include:

Volunteer Donor	E6051V00
Autologous	E6051100
Directed	E6051200
Volunteer Donor, Divided Part 1	E60511A0
Etc.....	



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# Expiration Date and Time

## ISBT 128 Data Structure 005



## Expiration Date & Time Data Structure 005

**&>cyjjjhhmm**

&>	Data identifier
c	Century in which product expires
yy	Year within the century in which product expires
jjj	Julian day of the year on which product expires
hh	Hour at which product expires (00 to 23)
mm	Minute at which product expires (00 to 59)



# Collection Date and Time

## ISBT 128 Data Structure 007



## Collection Date & Time Data Structure 007

**&\*cyjjjhhmm**

- &\* Data identifier
- c Century in which product was collected
- yy Year within the century in which product collected
- jjj Julian day of the year on which product collected
- hh Hour at which product collected (00 to 23)
- mm Minute at which product collected (00 to 59)

**Note:** *Used for all components except Pooled Platelets.*



# Production Date and Time

## ISBT 128 Data Structure 009



## Production Date & Time Data Structure 009

**&}cyjjjhhmm**

- &}** Data identifier
- c** Century in which product was produced
- yy** Year within the century in which product produced
- jjj** Julian day of the year on which product produced
- hh** Hour at which product produced (00 to 23)
- mm** Minute at which product produced (00 to 59)

**Note:** *Used only for Pooled Platelets*



# Special Testing: General

## ISBT 128 Data Structure 010

## Special Testing: General Data Structure 010

**&(zzzzz**

&( Data identifier

zzzzz 5 digit alphanumeric data content string (A-Z;0-9)

- Data content string encoded and interpreted with reference to Special Testing database table, published and maintained by ICCBBA.

## Special Testing: General Data Structure 010

### Purpose:

- Indicates special characteristics of a product, e.g. CMV antibody status, IgA deficiency
- Will be found on labels of platelet and plasma products produced by Canadian Blood Services

## Special Testing: Red Blood Cell Antigens - General

### ISBT 128 Data Structure 012

## Special Testing: Red Blood Cell Antigens - General Data Structure 012

**-\aaaaaaaaaaaaaaaaaii**

=\ Data identifier

aaaaaaaaaaaaaaaaaii 18 character data content string (0-9)

- Data content string encoded and interpreted using Table 10 in ISBT 128 Standard Technical Specification (ICCBBA)

## Special Testing: Red Blood Cell Antigens Data Structure 012

- Will be on labels of whole blood and red blood cell components produced by Canadian Blood Services
- Canadian Blood Services will encode Rh antigens individually using positions 14, 15 and/or 16 and value of column 1 will be set to 9 (no information)
- If additional red cell antigen testing has been performed but cannot be encoded in the bar code structure, the information will appear on the label in eye readable form
- Rules for printing of eye readable red cell phenotype (e.g bold, underline) will not change with ISBT 128 implementation.

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**For more information on ISBT 128  
implementation at Canadian  
Blood Services:  
[www.transfusionmedicine.ca](http://www.transfusionmedicine.ca)**

