IMPLEMENTATION GUIDE

Use of Dimensions [Data Structure 029]

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Table of Contents

Tables

Figures

1 Introduction

1.1 Purpose

The purpose of this document is to provide implementation guidance for users and software developers who wish to implement Dimensions [Data Structure 029].

1.2 Scope

This document provides background information and examples of the use of Dimensions [Data Structure 029]. It provides supplementary information only and is therefore intended to be used in conjunction with the *ISBT 128 Standard Technical Specification* (ST-001).

1.3 Intended Audience

This document is intended for staff (management, laboratory, quality, validation, and information technology) of facilities using ISBT 128, software developers, and manufacturers of labels for medical products of human origin.

1.4 Normative Reference

ISBT 128 Standard Technical Specification (ST-001)

1.5 Other Reference

Implementation Guide: Use of Data Matrix Symbols with ISBT 128 (IG-014)

1.6 Background

There is a need to be able to electronically transfer highly variable and measurable characteristics about products. These characteristics can include weight, volume, and size (length, width, and height), as well as characteristics such as cell counts (e.g., a platelet count) or hematocrit.

Dimensions [Data Structure 029] provides this capability with a high level of flexibility. It can convey such information as

- a simple volume (e.g., that a red cell product contains 215 mL);
- a cell count;
- a measurement that is within a range of values (e.g., the sizes of the particles of ground bone are between 1 and 8 mm); or
- a three-dimensional description of a product (e.g., a bone block is 12 mm x 12 mm x 5 mm).

The tables associated with this data structure (RT037, RT038, and RT039) can be expanded as needed to allow additional types of information to be transferred. These tables can be found in this document, but the *ISBT 128 Standard Technical*

Specification (ST-001) should be consulted for the most recent version of the tables. To request additions to these tables, contact the ICCBBA office (iccbba@iccbba.org).

The Product Code [Data Structure 003] allows similar information to be conveyed using either the Final Content or the Dosage:Additional Info Attributes. For example, using these Attributes, a volume range for plasma (e.g., >=200 mL and <400 mL) or a count range for platelets (e.g., 3.0 to 4.7 E11 platelets) is available. However, these Attributes can convey only a range of values. The Dimensions Data Structure can convey an exact measured value.

There are times when both types of information, general and specific, are useful. For example, when a volume range is encoded into the Product Code, it aids in managing inventory levels for different plasma volume ranges (e.g., maintaining an established inventory level of >=200 mL to <400 mL plasma products and an established inventory level of >=400 mL to <600 mL plasma products). When encoded as an exact volume, it helps the clinician know exactly how much plasma is being transfused. Finally, the two data structures can be used together to convey both types of information, but processes must be in place to ensure consistency of information.

It is expected that if more than one dimension is to be conveyed, this data structure will be used either in electronic messages or in a 2-D symbol. It is not practical to use linear bar codes for this data structure when encoding multiple dimensions on an affixed label given the number of characters that would be required.

1.7 Changes in this Version

The following table indicates the major changes between version 1.2.0 and version 1.3.0. Actual changes or additions to requirements of the ISBT 128 Standard are in bold print; changes to formatting or organization, or additional guidance, are in regular print. If changes were a result of a formal proposal, the number of the proposal is listed in the Rationale column.

	Version 1.2.0 Chapter, Section, Table, or Figure	Version 1.3.0 Chapter, Section, Table, or Figure	Change	Rationale
1.	Throughout	Throughout	Examples and barcodes were updated.	To reflect current dates and content in ST-001.
2.	Throughout	Throughout	Figures were updated.	To reflect current dates and content in ST-001.
3.	1.6, 2, and 10	1.6, 2, and 10	Changed name of “Dosage-Additional Information” Attribute group to “Dosage:Additional Info.”	To reflect the appropriate name of the Attribute group.
4.	3	3	Updated data structure section text.	To reflect current information for the Dimensions Data Structure in ST-001.
5.	Table 2	Table 2	Updated “Description” column for Value 0001.	To accurately reflect content of RT038 in ST-001.
6.	4.2	4.2	Changed text in the “Information” column for number of platelets to read “…is measured in units of 1E9…”	For clarification of the unit of measurement for platelets per Table RT038.
7.	5.1	5.1	Changed section header to “Constructing a Compound Message.”	To more accurately reflect content in section.
8.	5.1	5.1	Updated section text for constructing compound messages.	To reflect current information in ST-001 for the Compound Message.
9.	5.2	5.2	Under the “Information” column for element aa, changed “CMV status” to “Special Testing: General.”	Section is referring to the name of the data structure, not what it encodes.
10.	5.2	5.2	Clarified “Information” column text for the Donation Identification Number Data Structure.	To clearly indicate the information the data structure is providing.

	Version 1.2.0 Chapter, Section, Table, or Figure	Version 1.3.0 Chapter, Section, Table, or Figure	Change	Rationale
11.	5.3	5.3	Clarified the “Information” column text for Data Structures 001 and 003.	To clearly indicate the information the data structures are providing.
12.	5.4	5.4	Changed “Structure” to “ICCBBA-Specified” for Compound Message in the “Information” column for element bbb.	To reflect current terminology used in ST-001.
13.	5.4	5.4	Clarified the “Information” column text for Data Structure 001.	To clearly indicate the information the data structure is providing.
14.	6	6	Updated note for 2-D symbol use.	To reflect current information in ST-001 due to proposal 15-002 v2 approval.
15.	6	6	Changed “accompanying document” to “accompanying or attached documentation.”	To reflect terminology used in ST-001 for placement of information.
16.	6, 10	6, 10	Changed “bar code text” to “Text associated with the electronically readable information.”	“Bar code text” terminology is no longer used in the ISBT 128 Standard.
17.	6, 10	6, 10	Deleted reference to look in ST-001 for the definition of bar code text.	“Bar code text” terminology is no longer used in the ISBT 128 Standard.
18.	8	8	Removed all references to numbers for examples.	There aren’t any numbers associated with the examples in the various sections.

2 Precautionary Notes

Information conveyed in the Dimensions Data Structure and the Final Content and Dosage:Additional Info Attributes of the Product Code Data Structure may be similar. If a facility chooses to use the Dimensions Data Structure and either the Final Content or Dosage:Additional Info Attribute to convey similar information, it shall have appropriate process control measures in place to ensure the information within these data structures is consistent.

It is recommended that information within the Dimensions Data Structure be firmly linked to the Donation Identification Number (DIN) if the symbol is not on the affixed label. Either concatenated linear bar codes or a 2-D symbol encoding a compound message with both data structures should be used.

3 Dimensions [Data Structure 029]

Purpose: Data Structure 029 shall carry information about the dimensions (length, area, volume, etc.) of a product.

Structure: &$nnaabbbbcccccdee…aabbbbcccccdee

Element	Length	Type
&	1	data identifier, first character
$	1	data identifier, second character
nn	2	numeric value {00-99}
		Repeating segments (repeats nn times):
aa	2	numeric value {0-9}
bbbb	4	numeric value {0-9}
ccccc	5	numeric value {0-9}
d	1	numeric value {0-9}
ee	2	numeric value {0-9}

The data content string, **nnaabbbbcccccdee**, shall be encoded and interpreted as follows:

nn Number of repeating segments

Repeating segment (repeats nn times):

aa Refers to a symbol as defined by Table 1, page 11

bbbb Refers to a dimension as defined by Table 2, page 11

ccccc Value of the dimension specified in the associated Product Description Code. Dimension values are in accordance with the limits of accuracy specified in the supplier's product catalog or product insert. Should the measured value be less than 5 characters, leading zeroes shall be used.

d Number of decimal places as defined in Table 3, Page 11

ee Reserved for future use, set to 00 default

There is no requirement for the order in which dimensions may appear in the data string. Software shall be written to place a value in the appropriate field based on the value of aa and bbbb of the Dimensions Data Structure.

If the Dimensions Data Structure does not appear on an affixed label, it should be linked to the DIN to which it corresponds. It is strongly recommended that a Compound Message [Data Structure 023] that incorporates both the DIN and Dimensions Data Structures be used.

If more than one dimension is conveyed and a linear bar code is used, the symbol may be too large to fit on the affixed label. In this situation, it is anticipated that this data structure will be

used in electronic communication or on documents accompanying the product rather than on the container label.

Reading software should always verify the integrity of the data string, including checking that the correct number of repeating segments occurs. Data should only be interpreted if the integrity of the entire data string has been confirmed.

Table 1 Data Structure 029: Symbols [RT037]

Value	Description
01	Dimension is equal to the expressed value within a tolerance defined by the facility
02	Dimension is greater than the expressed value
03	Dimension is greater than or equal to the expressed value
04	Dimension is less than the expressed value
05	Dimension is less than or equal to the expressed value
06	Dimension is the nominal value as defined within a circular of information/package insert for the product

Table 2 Data Structure 029: Dimensions [RT038]

Value	Units	Description
0001	mL	Volume of the associated product including the anticoagulant/additive
0002	mm	Length of the associated product
0003	mm	Width of the associated product
0004	mm	Height of the associated product
0005	mm	Particle size of the associated product
0006	cm^2	Area of the associated product
0007	1E9	Total number of platelets in the container of the associated product
0008	g	Weight of associated product excluding the container but including the anticoagulant/additive
0009	g	Tare weight of container
0010	g	Tare weight of container and attached tubing
0011	rings	Length of trachea expressed in number of rings

Table 3 Data Structure 029: Decimal Point [RT039]

Value	Meaning	Example
0	Integer value	12345
1	Decimal point between fourth and fifth numbers	1234.5
2	Decimal point between third and fourth numbers	123.45
3	Decimal point between second and third numbers	12.345
4	Decimal point between first and second numbers	1.2345
5	Decimal point is in the first position	.12345

4 Constructing a Message

4.1 Volume Information

At a simple level, the Dimensions [Data Structure 029] may convey a single value. For example, a product has 215 mL of Red Blood Cells. To encode this information, begin with the data structure:

&$nnaabbbbccccccdee…aabbbbccccccdee

Element	Value	Information
Data identifier	&$	
nn	01	This is the number of repeating segments. In this case, only one segment is needed. So nn is 01.
aa	01	This is the symbol from Table 1 [RT037]. The volume of this red cell product is 215 mL (within the accuracy defined by the facility). Therefore 01 (dimension is equal to the expressed value within a tolerance defined by the facility) is the appropriate value for aa.
bbbb	0001	This is the dimension and is drawn from Table 2 [RT038]. Because this is a volume, value 0001 (volume of the product in mL) is the appropriate value.
ccccc	00215	This is the measured value. Because the value has fewer than 5 characters, leading zeroes must be added. Therefore ccccc is 00215.
d	0	This is the location of the decimal point. This value comes from Table 3 [RT039]. The volume of this red cell product is an integer, so 0 is the appropriate value.
ee	00	ee are reserved for future use and are set to 00.

Based on this, the data string is: &$0101000100215000

4.2 Platelet Count

A platelet count of an apheresis platelet product is 310E9. To encode this information, begin with the data structure:

&$nnaabbbbccccccdee…aabbbbccccccdee

Element	Value	Information
Data identifier	&$	
nn	01	This is the number of repeating segments. In this case, only one segment is needed. So nn is 01.
aa	01	This is the symbol from Table 1 [RT037]. The count of this platelet apheresis product is 310E9 (within the accuracy defined by the facility). Therefore 01 (dimension is equal to the expressed value within a tolerance defined by the facility) is the appropriate value for aa.
bbbb	0007	This is the dimension and is drawn from Table 2 [RT038]. Because this is a platelet count, value 0007 (number of platelets in the associated product is measured in units of 1E9) is the appropriate value.
ccccc	00310	This is the measured value. Because the value has fewer than 5 characters, leading zeroes must be added. Therefore ccccc is 00310.
d	0	This is the location of the decimal point. This value comes from Table 3 [RT039]. The platelet count value is an integer, so 0 is the appropriate value.
ee	00	ee are reserved for future use and are set to 00.

Based on this, the data string is: &$0101000700310000

4.3 Range of Values

A ground cancellous bone product has particle size of 1 to 8 mm. Again, to encode this information, begin with the data structure:

&$nnaabbbbcccccdee…aabbbbcccccdee

Element	Value	Information
Data identifier	&$	
nn	02	This is the number of repeating segments. In this case, there are two values to convey: the upper and lower limits of the particle size. Therefore the value of nn is 02, and there will be two repeating segments.
		First segment, which will express the lower end of the range.
aa	03	This is the symbol from Table 1 [RT037]. Because the lower end of the range is being expressed, 03 (dimension is greater than or equal to the expressed value) is appropriate.
bbbb	0005	This is the dimension and is drawn from Table 2 [RT038]. Because this is a fragment size of a ground bone product, 0005 (size of the particles in mm) is the appropriate value.
ccccc	00001	This is the measured value. Because the value has fewer than 5 characters, leading zeroes must be added. Therefore ccccc is 00001.
d	0	This is the location of the decimal point. This value comes from Table 3 [RT039]. The lower end diameter of this ground bone product is an integer, so 0 is the appropriate value.
ee	00	ee are reserved for future use and are set to 00.
		Second segment (upper end of range).
aa	05	This is the symbol from Table 1 [RT037]. Because the upper end of the range is being expressed, 05 (dimension is less than or equal to the expressed value) is appropriate.
bbbb	0005	This is the dimension and is drawn from Table 2 [RT038]. Because this is a particle size, 0005 (size of the particles in mm) is the appropriate value.
ccccc	00008	This is the measured value. Because the value has fewer than 5 characters, leading zeroes must be added. Therefore ccccc is 00008.
d	0	This is the location of the decimal point. This value comes from Table 3 [RT039]. The upper end diameter of this ground bone product is an integer, so 0 is the appropriate value.
ee	00	ee are reserved for future use and are set to 00.

The data string is: &$02030005000010000500050000800 0

4.4 Multiple Dimensions

A bone block is 12 mm x 12 mm x 5 mm. To encode this information, begin with the data structure:

&$ nnaabbbbcccccdee…aabbbbcccccdee

Element	Value	Information
Data identifier	&$	
nn	03	This is the number of repeating segments. In this case, there are three values to convey: length, width, and height. Therefore the value of nn is 03, and there will be three repeating segments.
		First segment (length of the bone block).
aa	01	This is the symbol from Table 1 [RT037]. The length of the product is 12 mm (within the accuracy defined by the facility). Therefore 01 (dimension is equal to the expressed value within a tolerance defined by the facility) is the appropriate value for aa.
bbbb	0002	This is the dimension and is drawn from Table 2 [RT038]. Because this is a length value, 0002 (length of the associated product in mm) is the appropriate value.
ccccc	00012	This is the measured value. Because the value has fewer than 5 characters, leading zeroes must be added. Therefore ccccc is 00012.
d	0	This is the location of the decimal point. This value comes from Table 3 [RT039]. The length of this bone block is an integer, so 0 (no decimal point) is the appropriate value.
ee	00	ee are reserved for future use and are set to 00.
		Second segment (width of the bone block).
aa	01	This is the symbol from Table 1 [RT037]. The width of the product is 12 mm (within the accuracy defined by the facility). Therefore 01 (dimension is equal to the expressed value within a tolerance defined by the facility) is the appropriate value for aa.
bbbb	0003	This is the dimension and is drawn from Table 2 [RT038]. Because this is a width value, 0003 (width of the associated product) is the appropriate value.
ccccc	00012	This is the measured value. Because the value has fewer than 5 characters, leading zeroes must be added. Therefore ccccc is 00012.
d	0	This is the location of the decimal point. This value comes from Table 3 [RT039]. The width of this bone block product is an integer, so 0 (no decimal point) is the appropriate value.
ee	00	ee are reserved for future use and are set to 00.
		Third segment (height of the bone block).
aa	01	This is the symbol from Table 1 [RT037]. The height of the product is 5 mm (within the accuracy defined by the facility). Therefore 01 (dimension is equal to the expressed value within a tolerance defined by the facility) is the appropriate value for aa.
bbbb	0004	This is the dimension and is drawn from Table 2 [RT038]. Because this is a height value, 0004 (height of the associated product) is the appropriate value.

Element	Value	Information
ccccc	00005	This is the measured value. Because the value has fewer than 5 characters, leading zeroes must be added. Therefore ccccc is 00005.
d	0	This is the location of the decimal point. This value comes from Table 3 [RT039]. The height of the bone block is an integer, so 0 (no decimal point) is the appropriate value.
ee	00	ee are reserved for future use and are set to 00.

The data string is: &$0301000200012000010003000120000100040000 5000

5 Compound Messages

The *ISBT 128 Standard Technical Specification* (ST-001) describes the Compound Message [Data Structure 023]. This data structure allows multiple data structures to be combined into a single data string to facilitate the use of newer technology delivery systems.

5.1 Constructing a Compound Message

Using the Compound Message Data Structure, the Dimensions [Data Structure 029] can be combined with other data structures into a single data string. For example, the volume of a red cell product (215 mL) may be conveyed along with its Donation Identification Number (DIN), Blood Group, Product Code, Expiration Date and Time, and CMV result.

The Compound Message Data Structure is =+aabbb where:

aa shall specify the number of ISBT 128 data structures that follow;

bbb shall be either:

- all zeros – indicating this is an undefined message (i.e., only the number of data structures is identified, but not what each one is or the order in which they occur)

- a three-digit number referencing an entry in an ICCBBA maintained table that defines the sequence of the data structures within a compound message (see Table W2, [RT017] ICCBBA-Specified Compound Messages on the ICCBBA website)

Note: Because of the complexity created by multiple product categories and the many codes that would result from permutations of order of data structures, ICCBBA now encourages the use of undefined messages.

Rules for constructing compound messages:

1. A compound message shall comprise a string of ISBT 128 data structures (excluding nationally defined structures), beginning with the Compound Message [Data Structure 023].

2. Data structures shall be combined with no intervening characters. Each data structure shall begin with its data identifier characters.

3. The string shall only contain ISBT 128 data structures.

4. The number of data structures following the Compound Message Data Structure shall be indicated in element aa of the Compound Message Data Structure.

5. If the sequence of the message is unspecified, the Compound Message Data Structure shall have element bbb set to zeroes and element aa shall be set as specified in Rule 4.

6. If a specified sequence is used, the reference number of the selected message from Table RT017 shall be included in element bbb of the Compound Message Data Structure. The order of the data structures shall be that shown on Table RT017 for the reference number selected.

ICCBBA-specified compound messages are defined in Table W2, [RT017] ICCBBA-Specified Compound Messages (found on the ICCBBA website). While ICCBBA now encourages the use of undefined messages, requests for additional entries may be submitted to the ICCBBA office (tech.manager@iccbba.org).

Reading software should be able to interpret both undefined sequence and ICCBBA-specified sequence compound messages. The software should always verify the integrity of the data string, including checking that the correct number of data structures appears and, when specified sequence messages are used, that the sequence of data structures is correct. Data should only be interpreted if the integrity of the relevant data structures has been confirmed.

5.2 Compound Message with One Dimension, Specified Sequence

The data string for a red cell product with a DIN, the blood group, a Product Code, expiration date and time, CMV status, and volume would be constructed as follows:

Compound message information:

Element	Value	Information
Data identifier	=+	
aa	06	There are six data structures to be used: Donation Identification Number, Blood Groups [ABO and RhD], Product Code, Expiration Date and Time, Special Testing: General, and Dimensions (volume).
bbb	023	This element identifies the ICCBBA-Specified Compound Message when one exists. For this combination of data structures, 023 is the appropriate identifier. See Table W2, [RT017] ICCBBA-Specified Compound Messages on the ICCBBA website.

The data structures to be included in the compound message include:

Data Structure	Value	Information
Donation Identification Number [001]	= A99991812345622	DIN is A9999 18 123456 With locally defined flag characters 22
Blood Groups [ABO and RhD] [002]	=%8400	AB, RhD Positive
Product Code [003]	=<E0195V00	RED BLOOD CELLS|CPDA-1/450mL/refg, from a volunteer donor, undivided
Expiration Date and Time [005]	&>0190152359	15 JAN 2019 23:59
Special Testing: General [010]	&(N0008	CMV seronegative
Dimensions [029]	From the example in 4.1, the data string for a 215 mL volume is: &$0101000100215000	215 mL

The full data string is:
=+06023=A99991812345622=%8400=<E0195V00&>0190152359&(N0008&$0101000100215000

5.3 Compound Message with One Dimension, Unspecified Sequence

A message for a skin product with a DIN, a Product Code, expiration date and time, an area dimension, and processing facility information would be coded as follows:

Compound message information:

Element	Value	Information
Data identifier	=+	
aa	05	There are five data structures to be used: Donation Identification Number, Product Code, Expiration Date and Time, Dimensions (area), and Processing Facility Information Code.
bbb	000	This element indicates that the sequence of the data structures in the message is not specified by ICCBBA.

The data structures to be included in the compound message include:

Data Structure	Value	Information
Donation Identification Number [001]	= A99991812345824	DIN is A9999 18 123458 With locally defined flag characters 24
Product Code [003]	=<T0382003	SKIN, FULL|Allogeneic|Not meshed|Glycerol (high conc) This is pack 3.
Expiration Date and Time [005]	&>0193652359	31 DEC 2019 23:59
Dimensions [029]	&$0101000600082100	The skin has a surface area of 8.2 cm^2. Therefore, the decimal is between the fourth and fifth numbers (which is 1 according to Table 3 [RT039] on page 11). This is coded as 00082 followed by 1.
Processing Facility Information Code [033]	&+A9996000376	Facility A9996 processed the skin, and their internal catalog number is 376.

The full data string is:
=+05000=A99991812345824=<T0382003&>0193652359&$0101000600082100&+A9996000376

5.4 Compound Message with Three Dimensions

A data string for a compound message with a DIN, a Product Code, expiration date and time, and three dimensions would be constructed as follows:

Compound message information:

Element	Value	Information
Data identifier	=+	
aa	04	There are four data structures to be used: Donation Identification Number, Product Code, Expiration Date and Time, and Dimensions (length, width, and height).
bbb	012	This element identifies the ICCBBA-Specified Compound Message when one exists. For this combination of data structures, 012 is the appropriate identifier. See Table W2, [RT017] ICCBBA-Specified Compound Messages on the ICCBBA website.

The data structures to be included in the compound message include:

Data Structure	Value	Information
Donation Identification Number [001]	= A99991812345622	DIN is A9999 18 123456 With locally defined flag characters 22
Product Code [003]	=<T0055000	BONE, BLOCK|Freeze dried|Single|Radiation sterilization|Cancellous
Expiration Date and Time [005]	&>0210152359	15 JAN 2021 23:59
Dimensions [029]	The data string from 4.4 (three dimensions of a bone block) above is: &$03010002000120000100030001200001000400005000	12 mm x 12 mm x 5 mm

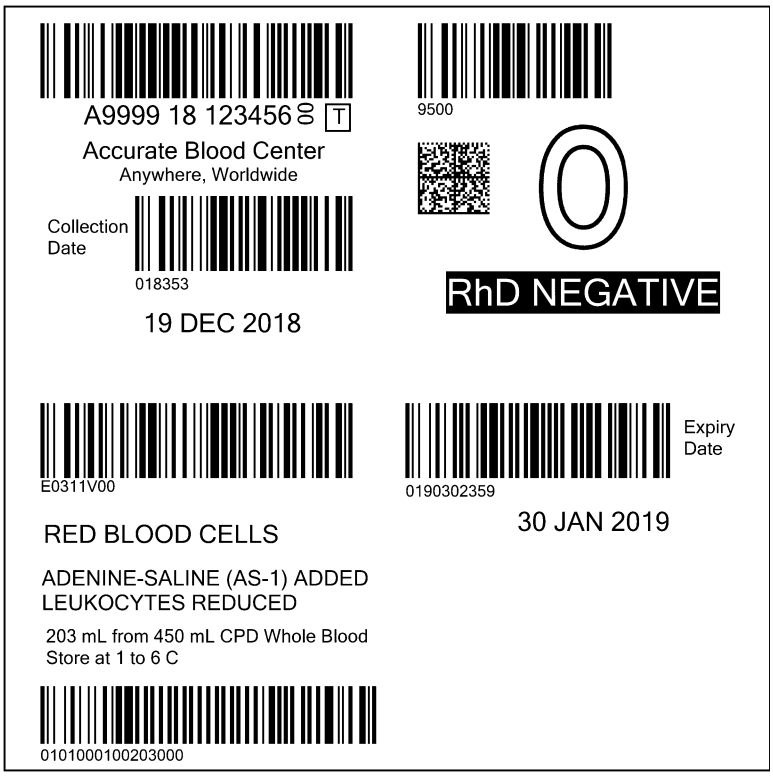
The full data string for the compound message is:
=+04012=A99991812345622=<T0055000&>0210152359&$03010002000120000100030001200001000400005000

6 Affixed Product Labels

When only a single dimension is being conveyed, a linear bar code printed on the affixed label may be possible, depending on other text and bar codes on the label (see Figure 1).

If space does not permit, the bar code and text may need to be placed on accompanying or attached documentation (e.g., a tie tag).

Figure 1 Label with Dimensions Bar Code (Volume)



Note: When a 2-D symbol containing information for multiple data structures is present with multiple linear bar codes, it is considered a "transition label." Transition labels allow facilities receiving products time to develop the software capacity to read and interpret 2-D symbols. In this case, the location of the 2-D symbol may be nationally-defined. In discussions of Technical Advisory Groups, the recommendation has been made to place such a 2-D symbol as close as possible to its eventual location. Thus, this example shows the 2-D symbol in the upper half of the label. This is not standardized and facilities may select a different location.

When more than one dimension is being conveyed, especially in conjunction with other data structures such as the Donation Identification Number, a 2-D symbol is necessary.

The size of the 2-D symbol will increase with the amount of information encoded. The example message in Section 5.4 has three dimensions as well as the DIN, Product Code, and Expiration Date and Time. With an X dimension of about 0.3 mm, the symbol is 10 mm square. Consideration must be given to the size of the symbol, and what other information must appear,

when determining whether this symbol should appear on an affixed label. The size of the container varies considerably for blood, cellular therapy, and tissue products, so a general rule cannot be stated.

Text associated with the electronically readable information associated with the Dimensions Data Structure should be nationally defined.

Figure 2 and Figure 3 provide additional examples of the use of this data structure.

Figure 2 Label with 2-D Symbol Including Dimensions (Platelet Count and Volume)

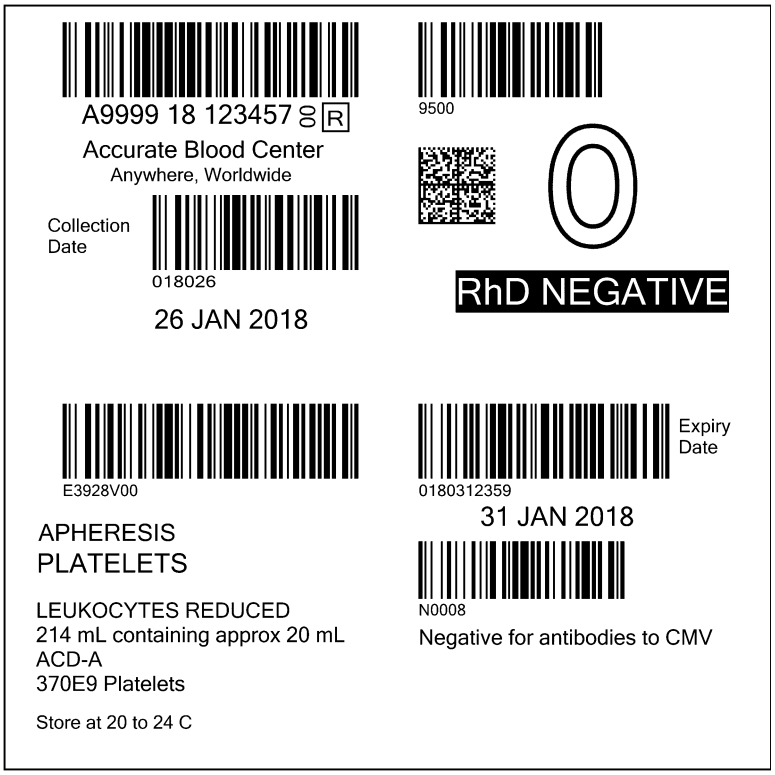
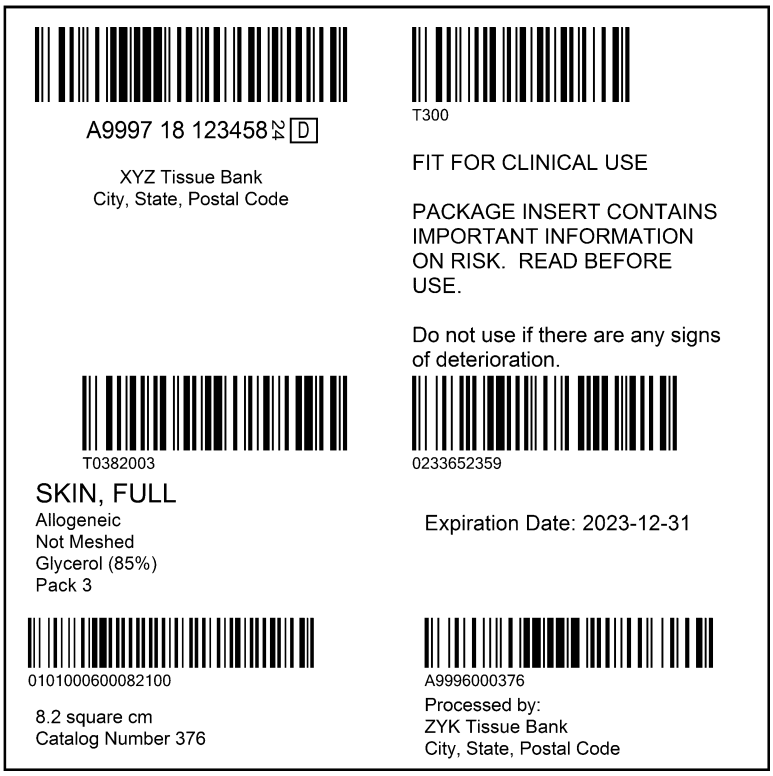


Figure 3 Tissue Label with Dimensions with Linear Bar Code



7 Other Labeling and Documents

The Dimensions Data Structure may be used on other labeling such as tie tags and documents that accompany the product. If the Dimensions Data Structure does not appear on an affixed label, it should be firmly linked to the DIN to which it corresponds. It is strongly recommended that a Compound Message [Data Structure 023] that incorporates both the Donation Identification Number and Dimensions Data Structures be used.

8 Example Messages and Symbols

Symbols corresponding to the sections above are:

Example from Section 4.1, Volume Information: &$0101000100215000

Linear Symbol: 

2-D Symbol: 

Example from Section 4.2, Platelet Count: &$0101000700310000

Linear Symbol: 

2-D Symbol: 

Example from Section 4.3, Range of Values: &$02030005000010000500050000 8000

Example from Section 4.4, Multiple Dimensions:

&$03010002000120000100030001200001000400005000

Example from Section 5.2, Compound Message with One Dimension, Specified Sequence:

=+06023=A99991812345622=%8400=<E0195V00&>0190152359&(N0008&$01010001002150 00

Example from Section 5.3, Compound Message with One Dimension, Unspecified Sequence:

=+05000=A99991812345824=<T0382003&>0193652359&$0101000600082100&+A9996000376

Example from Section 5.4, Compound Message with Three Dimensions:

=+04012=A99991812345622=<T0055000&>0210152359&$03010002000120000100030001200001000400005000

9 Electronic Data Interchange

Another appropriate use of the Dimensions Data Structure is in an electronic message, such as an HL7 message. For more information on HL7, see their website at www.hl7.org. For more information on the use of this data structure within an electronic message, see the *ISBT 128 Standard Technical Specification* (ST-001), including Table RT042.

10 Notes for Software Developers

There is no requirement for the order in which dimensions may appear in the data string. Software shall be written to place a value in the appropriate field based on the value of aa and bbbb of the Dimensions Data Structure. In the text associated with the electronically readable information in the bar code, the order of the dimensions may be nationally defined.

Reading software should be able to interpret both undefined sequence and ICCBBA-specified sequence compound messages. The software should always verify the integrity of the data string, including checking that the correct number of data structures appears and, when specified sequence messages are used, that the sequence of data structures is correct. Data should only be interpreted if the integrity of the relevant data structures has been confirmed.

Dimension information is specific to a DIN and a Product Code (and a Product Divisions Code, if applicable).

As noted in the Precautionary Notes:

Information conveyed in the Dimensions Data Structure and the Final Content and Dosage:Additional Info Attributes of the Product Code Data Structure may be similar. If a facility chooses to use the Dimensions Data Structure and either the Final Content or Dosage:Additional Info Attribute to convey similar information, it shall have appropriate process control measures in place to ensure the information within these data structures is consistent.

It is recommended that information within the Dimensions Data Structure be firmly linked to the DIN if the symbol is not on the affixed label. Concatenated linear bar codes or a 2-D symbol encoding a compound message with both data structures is recommended.

