ICCBBA
ISBT 128 Standard for Traceability

IMPLEMENTATION GUIDE

A Validation Tool for ISBT 128 Data Structures

Version 1.4.0

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1 Introduction

1.1 Purpose

This guidance document is intended to provide users with assistance in evaluating the capabilities of their ISBT 128 bar code reading software and to provide input to their validation process.

This document provides a means to help make users aware of how their system responds to a given data structure and focuses on one data structure per section. The following types of information (when applicable) are included in each section:

- An overview of the data structure and its coding values table, consistent with the *ISBT 128 Standard Technical Specification* (ST-001)
- Features and/or elements unique to the data structure
- Reference to other ICCBBA publications that may be pertinent to the data structure
- Scannable bar codes encoded with either valid or non-compliant messages
- General considerations pertinent to the data structure

This guidance should be used in conjunction with the current version of the *ISBT 128 Standard Technical Specification* (ST-001), and the intended audience should already be familiar with the specifications of the Standard and have a comprehensive understanding of ISBT 128 data structures.

The purpose of this document is to provide a mechanism to validate software reading bar coded labels. Regulatory and compliance staff, as well as software developers, may find this guidance document helpful when developing certain validation test plans.

1.2 Scope

This version of IG-043 provides ISBT 128 linear bar code examples [Code 128] using the following data structures:

- Donation Identification Number [Data Structure 001]
- Blood Groups [ABO and RhD] [Data Structure 002]
- Product Code [Data Structure 003]
- Expiration Date and Time [Data Structure 005]
- Collection Date and Time [Data Structure 007]
- Special Testing: General [Data Structure 010]
- Special Testing: Red Blood Cell Antigens – General [Data Structure 012]
- Special Testing: Platelet HLA and Platelet Specific Antigens [Data Structure 014]
- Flexible Date and Time [Data Structure 031]
- Product Divisions [Data Structure 032]
- Processing Facility Information Code [Data Structure 033]
- Processor Product Identification Code [Data Structure 034]
- Chain of Identity Identifier [Data Structure 040]

2-D symbols [Data Matrix] will be provided for the Compound Message [Data Structure 023] and Single European Code [Data Structure 038] examples.

The example bar codes are encoded with either valid or non-compliant ISBT 128 messages. The types of non-compliant messages pertain to structural non-compliance, invalid data, and/or contextual inconsistency—some of these types of non-compliant messages do not apply to certain data structures. While these bar codes are intended for validation purposes, users and developers should not rely solely on this guidance document when validating software (or when developing such software). *This document is intended to be used as a validation tool, not a compliance checklist.*

> ***Note:*** *The bar codes provided in this document are not intended for code density comparison. Users are advised to reference the ISBT 128 Standard Technical Specification (ST-001) for information/requirements pertaining to symbol print quality and symbol dimensions.*

In addition to the *ISBT 128 Standard Technical Specification* (ST-001), this document is supplemented with other ICCBBA publications that provide greater detail and additional information on various aspects pertaining to the implementation of ISBT 128. For additional bar code examples, see *Implementation Guide: ISBT 128 Bar Codes: Valid and Invalid Examples* (IG-013).

1.3 Intended Audience

The intended audience for this document is as follows:

- Users of ISBT 128 (e.g., staff of facilities utilizing, or planning to utilize, the ISBT 128 Standard).
- ICCBBA-licensed vendors (e.g., software developers, label vendors, etc.).
- Other interested parties (e.g., regulators, auditors, etc.).

Users are encouraged to provide feedback on this document by sending an email to IG043.Comments@isbt128.org.

1.4 Normative Reference

ICCBBA:
[www.iccbba.org]

ISBT 128 Standard Technical Specification (ST-001)
ISBT 128 Standard Coding and Labeling of Medical Devices Using ISBT 128 (ST-011)
ISBT 128 Standard ISBT 128 and the Single European Code (SEC) (ST-012)
ISBT 128 Standard Coding and Labeling of Medical Devices Containing MPHO (ST-017)
ISBT 128 Standard Labeling of Reproductive Tissue and Cell Products (ST-019)
ISBT 128 Standard Chain of Identity (CoI) Identifier (ST-028)

American National Standards Institute (ANSI):
[webstore.ansi.org]

ANSI MH10.8.2:2010, Data Identifier and Application Identifier Standard (18 May 2010)

International Standards Organization (ISO):
[https://www.iso.org/store.html]

ISO/IEC 7064:2003 Information technology — Security techniques — Check character systems

1.5 Other References

The following guidelines[1] are maintained on the ICCBBA website

- *Implementation Guide: Use of Flags in the Donation Identification Number for Process Control of Critical Points during Processing and Distribution* (IG-010)
- *Implementation Guide: ISBT 128 Bar Codes: Valid and Invalid Examples* (IG-013)
- *Implementation Guide: Use of Data Matrix Symbols with ISBT 128* (IG-014)
- *Implementation Guide: Encoding Product Information [Data Structures 003, 032, 033, and 034] – Tissues* (IG-020)
- *Implementation Guide: Use of Product Code [Data Structure 003] Blood* (IG-021)
- *Implementation Guide: Use of Product Divisions [Data Structure 032]* (IG-023)
- *Implementation Guide: Use of Flexible Date and Time [Data Structure 031]* (IG-024)
- *Implementation Guide: Use of Processing Facility Information Code [Data Structure 033]* (IG-031)
- *Implementation Guide: Use of the Donation Identification Number [Data Structure 001]* (IG-033)
- *Implementation Guide: ISBT 128 Facility Identification Number* (IG-034)

1.6 Background

ISBT 128 is the global standard for the terminology, identification, coding, and labeling of medical products of human origin (MPHO). ISBT 128 Data Structures are internationally agreed entities for encoding information relevant to MPHO and define the technical characteristics necessary for the interpretation of the information.

As a global standard used in disparate health care systems, software systems that support ISBT 128 may vary in terms of the degree of compliance with the Standard. For example, a system could have a high level of ISBT 128 compliance which allows it to interpret many data structures for more than one product category; while, on the other hand, a system could have a low level of compliance which may only allow it to interpret a few data structures for a given product category.

Users and software developers should have a firm understanding of their system's degree of ISBT 128 compliance and, if applicable, should be aware of the implications associated with the limitations of the system.

[1] *The publication titles are current as of the date on the front cover of this document—while the title for a publication may change, the assigned tracking designation (e.g. IG-999) would remain the same. It is the responsibility of the registered and licensed establishments (or other parties alike) to ensure that they have the most recent version of all ICCBBA publications by regularly consulting the listing maintained on the ICCBBA website.*

1.7 Changes in this Version

The following table indicates the major changes between version 1.3.0 and version 1.4.0. **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.

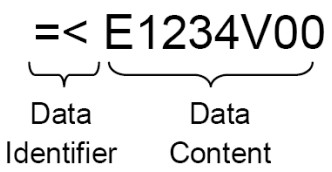
	Version 1.3.0 Chapter, Section, Table or Figure	Version 1.4.0 Chapter, Section, Table or Figure	Change	Rationale
1.	1.2	1.2	Included the data structures that were added in this version.	For consistency.
2.	1.4 & 1.5	1.4 & 1.5	Updated Normative and Other References.	To account for guidance documents applicable to the newly included data structures.
3.	3.3.1	3.3.1	Included ISBT 128 Clinical Trials Product Description Codes within the considerations for examples 3.5-3.7.	For completeness.
4.		Example 3.20	Added a structurally compliant example to the Product Code [Data structure 003] section that corresponds to the inclusion of '99' as the 7th and 8th characters of Product Code and renamed examples within the section that follow.	For completeness and to coincide with the inclusion of the Product Divisions [Data Structure 032] in the document.
5.	Throughout	Throughout	Renumbered and relocated sections and examples.	To accommodate the addition of new data structures, tables, and figures so that they appear in an order based on data structure number.
6.		3.5	Section added for Collection Date and Time [Data Structure 007].	To expand the number of ISBT 128 data structures covered within the document.
7.		3.10	Section added for Flexible Date and Time [Data Structure 031].	To expand the number of ISBT 128 data structures covered within the document.

	Version 1.3.0 Chapter, Section, Table or Figure	Version 1.4.0 Chapter, Section, Table or Figure	Change	Rationale
8.		3.11	Section added for Product Divisions [Data Structure 032].	To expand the number of ISBT 128 data structures covered within the document.
9.		3.12	Section added for Processing Facility Information Code [Data Structure 033].	To expand the number of ISBT 128 data structures covered within the document.
10.		3.13	Section added for Processor Product Identification Code [Data Structure 034].	To expand the number of ISBT 128 data structures covered within the document.
11.		3.14	Section added for Single European Code [Data Structure 038].	To expand the number of ISBT 128 data structures covered within the document.

2 ISBT 128 Data Structures

ISBT 128 Data Structures define the technical characteristics necessary for the interpretation of the information and are composed of two elements: the *data identifier* and the *data content*. Data structures specify the context and structure and, when applicable, provide the associations to the appropriate reference tables for conversion of codes to meaningful information.

Figure 1: Data Structure



- The *data identifier* determines the length and the allowable coding values (and the sequence of these values) for the data content.
- The *data conten*t is made up of data characters that provide the information to be conveyed.[2]

2.1 Data Identifiers

The *data identifier* is a two- or three-character code[2] that serves to identify the data structure. Its use is required when the context of the data structure presentation makes it necessary to also indicate the nature of the information being conveyed—for example, bar codes.

- First Character: ISBT 128 data identifiers begin with either the equals sign (“**=**”) [ASCII character code 61] or the ampersand (“**&**”) [ASCII character code 38]. These identifiers have been reserved by ANSI (ANSI MH10.8.2:2010) as ISBT 128 data identifiers to distinguish ISBT 128 data structures from all others.

- Second Character: The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character. However, there are some exceptions:
  - The data identifier for the DIN[2] (where the second character can be any of the alphanumeric characters 1–9, A–N, P–Z [but not a–z]).
  - The data identifier for data structures not defined by ICCBBA (refer to **Chapter 2** of the *ISBT 128 Standard Technical Specification* [ST-001] for more information).

- Third Character: The third character of an ISBT 128 data identifier can be alphanumeric.
  (**Note:** The first two characters of a three-character data identifier will never be a two-character data identifier on their own. For example, since the data identifier for the MPHO Lot Number [Data Structure 035] is “**&,1**”, “**&,**” does not [and will not] represent any two-character data identifier.)

[2] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content.*

See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for a list of ISBT 128 data identifiers with their corresponding data structures.

2.1.1 The Role of Data Identifiers in ISBT 128 Bar Codes

In bar codes, the data identifier is required for ensuring the correct interpretation of the encoded message. Therefore, in order to accurately interpret information from an ISBT 128 bar code, it is crucial that application software carry out the following steps before interpreting the data values (the data content):

- Analyze the data identifier to ensure that the bar code entered is of the correct type.
- Verify that the length and format of the data content match that defined for the corresponding data structure.

If a system fails to identify the framework and syntax of the encoded message prior to analyzing the data values themselves, the system could misinterpret the bar coded message [i.e. the system could confuse the data values with those of another data structure]. This could lead to incorrect assignment of critical information.

The following example illustrates this.

An ISBT 128 Blood Groups [ABO and RhD] [Data Structure 002] bar code for an A, RhD Positive unit reads as:

=%6200

where “=%” are the data identifier characters indicating that this is a Blood Groups [ABO and RhD] data structure, and “6200” are the data values for A, RhD Positive with no information encoded concerning C, c, E, e, K or Miltenberger phenotypes.

A Special Testing: Red Blood Cell Antigens – General [Data Structure 012] bar code on a Group O, RhD negative unit reads as:

=\620000000000000000

If the data identifier characters are ignored by the application software, entry of this second bar code in response to a blood groups prompt could cause the system to incorrectly assign a blood group for the unit as A, RhD Positive.

3 Types of Data Structure Messages

This validation tool includes the following types of bar coded data structure messages:

- *Valid message*: Includes a valid ISBT 128 data identifier and a data string that complies with the format, syntax, and application of the data structure associated with the data identifier.

- *Non-compliant messages*: This document includes examples for the following types of non-compliance:

    - **Structural:** Syntax-related errors such as the use of unallowable coding values or the incorrect data content length, as defined by the specifications for the data structure—for instance, the data structure does not meet the syntactic requirements specified in the allowable coding values table provided for each data structure.

    - **Invalid data:** The data content is structurally compliant but has values not defined within the standard. Invalid data occurs where the valid data values are specified within the *ISBT 128 Standard Technical Specification* (ST-001) in a bounded list (e.g., the Blood Groups [ABO and RhD] table [RT005] for Data Structure 002). Any value outside this list is non-compliant with the standard.

        (**Note:** Because the Facility Identification Number [FIN] Database and ISBT 128 Product Description Code [PDC] Database are not part of a bounded list, unallocated FINs and unassigned PDCs are considered valid messages.)

    - **Contextual inconsistency:** The data structure is structurally compliant and each element contains valid data, but there is an inconsistency between the elements. For example, a Donation Identification Number [Data Structure 001] with Type 3 flags, where the value of the Type 3 flag is not consistent with the checksum.

The types of data content permutations (the selection of coding values) presented in this document can be used for performing high-level (rudimentary verification) and low-level tests (specific verification) on software for reading bar coded labels. The examples in this document are limited to data content with a propensity of making a significant impact on a validation outcome.

Additional scannable bar codes—both linear (Code 128) and 2-D (Data Matrix)—can be found in the *Implementation Guide: ISBT 128 Bar Codes: Valid and Invalid Examples* guidance document (IG-013).

3.1 Donation Identification Number [Data Structure 001]

Purpose: Data Structure 001 shall specify:

- a thirteen (13)-character Donation Identification Number (DIN) that is a unique identification of:
  - a donation event [collection or recovery]
  - a product pool
  - for plasma derivatives, a unique identification of an aliquot from a pooled plasma derivative product
  - a zygote/embryo formed through ART

  AND

  - flag character values.

Structure: =αppppyynnnnnnff

Table 1: Data Structure 001 Coding Values

Element	Length	Type
=	1	data identifier, first character
α	1	data identifier, second character alphanumeric {A–N; P–Z; 1–9}
pppp	4	First two characters alphanumeric {A–N, P–Z, 0–9}; second two characters numeric {0–9}. Current usage is numeric for all four characters. Alpha characters may be introduced into positions 1 and 2 in the future (e.g., if α = A and pppp = BC12, the αpppp will be ABC12)
yy	2	numeric {0–9}
nnnnnn	6	numeric {0–9}
ff	2	alphanumeric {0–9}, {A–H, J–N, P, R–Y}

For more information on Data Structure 001, see **section 2.4.1** of the *ISBT 128 Standard Technical Specification* (ST-001).

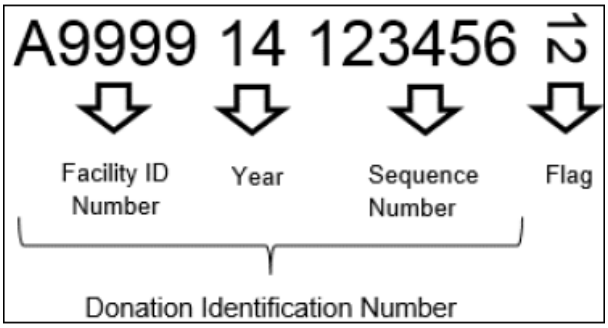
Considerations for Data Structure 001:

- It is the only data structure in which the second character of the data identifier is part of the data content.
- It comprises two fundamental elements, the Donation Identification Number (thirteen characters) and the flag characters (two characters).
  - The Donation Identification Number (DIN) comprises the following elements:
    - A five-character Facility Identification Number (FIN)

- A two-digit year code
- A six-digit sequence number

- The flag characters should be interpreted independently of the thirteen-character DIN as they are a separate data item. The ISBT 128 Standard defines three modes of use for flag characters, and it may be important to understand which of these the computer system supports.

Figure 2: DIN Data Elements



Additional References:

- *Implementation Guide: Use of Flags in the Donation Identification Number for Process Control of Critical Points during Processing and Distribution* (IG-010)
- *Implementation Guide: Use of the Donation Identification Number [Data Structure 001]* (IG-033)
- *Implementation Guide: ISBT 128 Facility Identification Number* (IG-034)

3.1.1 Valid Messages – Data Structure 001

Examples 1.1 through 1.5:

- Data content string begins with an uppercase alpha character.
- Default flag characters are used [no additional meaning].

Example 1.1	Data Identifier	Data Content	Check Character	Elements
	=	W00001642817500	1	**DIN (αppppyynnnnnn):** W000016428175 **Flag Characters (ff):** 00
Complete message encoded in bar code: =W00001642817500				

Example 1.2	Data Identifier	Data Content	Check Character	Elements
	=	A99991600006500	A	**DIN (αppppyynnnnnn):** A999916000065 **Flag Characters (ff):** 00

Complete message encoded in bar code:
=A99991600006500

Example 1.3	Data Identifier	Data Content	Check Character	Elements
	**=**	W12560712345600	K	**DIN (αppppyynnnnnn):** W125607123456 **Flag Characters (ff):** 00

Complete message encoded in bar code:
=W12560712345600

Example 1.4	Data Identifier	Data Content	Check Character	Elements
	=	C00030600145800	N	**DIN(αppppyynnnnnn):** C000306001458 **Flag Characters (ff):** 00

Complete message encoded in bar code:
=C00030600145800

Example 1.5	Data Identifier	Data Content	Check Character	Elements
	**=**	P00020601906300	X	**DIN(αppppyynnnnnn):** P000206019063 **Flag Characters (ff):** 00

Complete message encoded in bar code:
= P00020601906300

Considerations for Examples 1.1 through 1.5

Element of DIN Data Structure (=αppppyynnnnnnff)	Clarification	Considerations
FIN (αpppp)	The first character of the FIN may be any character in the set {A–N; P–Z; 1–9}.	Facility identifiers within a country may have the same first character, but other characters are used in different countries. There will be situations where systems need to limit acceptable donation numbers to those with a specific FIN or range of FINs, and there may be other situations where accepting the full range of possible FINs is appropriate (e.g., where a system needs to be able to accept imported units).

Examples 1.6 & 1.7:

- Data content string comprises only numeric characters.
- Default flag characters used [no additional meaning].

Example 1.6	Data Identifier	Data Content	Check Character	Elements
	=	900011612345600	E	**DIN (αppppyynnnnnn):** 9000116123456 **Flag Characters (ff):** 00
Complete message encoded in bar code: =900011612345600				

Example 1.7	Data Identifier	Data Content	Check Character	Elements
	=	503211659321200	Q	**DIN (αppppyynnnnnn):** 5032116593212 **Flag Characters (ff):** 00
Complete message encoded in bar code: =503211659321200				

Considerations for Examples 1.6 and 1.7		
Element of DIN Data Structure (=αppppyynnnnnnff)	**Clarification**	**Considerations**
FIN (αpppp) Year code (yy) Serial number (nnnnnn) Flags (ff)	As indicated in the "Data Structure 001 – Coding Values" table, a DIN data content string can be made up of all numeric characters.	See the Considerations section for **Examples 1.1 through 1.5** (above).

Example 1.8:

- First three characters of the data content string are uppercase alpha characters.
- Default flag characters are used [no additional meaning].

Example 1.8	Data ID	Data Content	Check Character	Elements
	=	WWW001612345600	6	**DIN (αppppyynnnnnn):** WWW0016123456 **Flag Characters (ff):** 00
Complete message encoded in bar code: =WWW001612345600				

Considerations for Example 1.8		
Element of DIN Data Structure (=αppppyynnnnnnff)	**Clarification**	**Considerations**

FIN (αpppp)	• The first character of the FIN may be any character in the set {A–N; P–Z; 1–9}. • The second and third character of the FIN may be any character in the set {A–N; P–Z; 0–9}. • The fourth and fifth character of the FIN may be numeric {0–9}.	With regard to "pppp" of "αpppp", current usage is numeric for all four characters. Alpha characters may be introduced into positions 1 and 2 in the future.

Example 1.9

- Data content string begins with an uppercase alpha character.
- Type 1 flag characters are used [two-character code used for process control and defined by ICCBBA].

Example 1.9	Data Identifier	Data Content	Check Character	Elements
	=	W00001612345601	X	**DIN (αppppyynnnnnn):** W000016123456 **Flag Characters (ff):** 01

Complete message encoded in bar code:
=W00001612345601

Example 1.10

- Data content string begins with an uppercase alpha character.
- Type 2 flag characters are used [two-character code used for process control, but locally defined].

Example 1.10	Data Identifier	Data Content	Check Character	Elements
	=	W00001698765425	U	**DIN (αppppyynnnnnn):** W000016987654 **Flag Characters (ff):** 25

Complete message encoded in bar code:
=W00001698765425

Example 1.11

- Data content string begins with an uppercase alpha character.
- Type 3 flag characters are used [a weighted ISO/IEC 7064 modulo 37-2 check character on the entire thirteen-character DIN].

Example 1.11	Data Identifier	Data Content	Check Character	Elements
	=	W00001600000172	C	**DIN (αppppyynnnnnn):** W000016000001 **Flag Characters (ff):** 72

Complete message encoded in bar code:
=W00001600000172

Considerations for Examples 1.9–1.11		
Element of DIN Data Structure (=αppppyynnnnnnff)	**Clarification**	**Considerations**

Flag Characters (ff)	Flag characters should be interpreted independently of the DIN as they are a separate data item.	• ISBT 128 defines three modes of use for flag characters (see **Section 2.4.1** of ST-001 for details), and it may be important to understand which of these a computer system supports.
		
		• System rules may impose control on which flag characters are accepted in specific situations in order to provide process control.
		  ○ However, where products are imported from external organizations (e.g., blood testing facilities), their use of flag characters may differ and thus may be more appropriate for importing software to allow other valid flag characters.
		  ○ Hospital blood bank systems users—who may receive blood from more than one source—may also wish to be able to accept all valid flag values.

3.1.2 Non-Compliant Messages – Structural

Example 1.12:

- Incorrect data identifier

Example 1.12	Data Identifier	Data Content
	&	W00001665432101

Message encoded in bar code:
&W00001665432101

Corrected message for comparison:
=W00001665432101

Considerations:

- With the exception of Data Structure 001[3] and non-ICCBBA defined data structures,[4] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "**=**" or "**&**" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "**&,**" (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 1.13:

- Incorrect data content length

Example 1.13	Data Identifier	Data Content
	=	W000016428175

Message encoded in bar code:
=W000016428175

Corrected message for comparison:
=W00001642817500

Considerations for Example 1.13:

- In this example, flag characters are missing from the encoded data content.
  - Even though the use of flag characters is optional, ISBT 128 requires the data content string of the DIN data structure to be 15 characters long.
  - When flag characters are not used, the value of the flags [the 14th and 15th position of Data Structure 001] shall be "00".
  - The keyboard entry check character is calculated from the 13-character DIN only (i.e. excluding the flag characters).

[3] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*
[4] *See Section 2.5 of the "ISBT 128 Standard Technical Specification" document* (ST-001) *for details on non-ICCBBA defined data structures.*

Example 1.14:

- Incorrect data content length

Example 1.14	Data Identifier	Data Content
	=	W0000164281750000

Message encoded in bar code:
=W000016428175000**0**

Corrected message for comparison:
=W00001642817500

Considerations:

- A valid DIN data content string comprises 15 alphanumeric characters.

Example 1.15:

- Unallowable coding values used in the 3rd and 4th position of the DIN data content string (FIN element).

Example 1.15	Data Identifier	Data Content
	=	W0OA01642817500

Message encoded in bar code:
=W0**O**A01642817500

Corrected message for comparison:
=W00**4**01642817500

Considerations:

- The allowable coding values for the first five characters of the DIN (i.e. the FIN portion of the DIN) are as follows:
  - The first three characters may be any character in the set {A–N; P–Z; 1–9}.
  - The fourth and fifth character may be numeric {0–9}.

- Although current usage is numeric for the second through fifth position of the DIN (i.e., the last four characters of the FIN), alpha characters may be introduced into the second and third position of the DIN in the future—for example, a FIN could be W**AB**01.

3.1.3 Non-Compliant Messages – Invalid Data

Example 1.16:

- Use of flag characters reserved for future assignment.

Example 1.16	Data Identifier	Data Content
	=	W000016428175AA

Message encoded in bar code:
=W000016428175AA

Corrected message for comparison:
=W000016428175**12**

Considerations:

- While "AA" is structurally compliant, Table RT004 (a bounded list) specifies that flags outside the range of 00 through 96 are reserved for future assignment. Therefore, "AA" is considered invalid until it is defined in reference table RT004 of the ISBT 128 Standard.

3.1.4 Non-Compliant Messages – Contextual Inconsistency

Example 1.17:

- Value of type 3 flags is not consistent with the checksum.

Example 1.17	Data Identifier	Data Content
	=	W000016000000171

Message encoded in bar code:
=W000016000000171

Corrected message for comparison:
=W000016000000172

Considerations:

- Flag values 60 through 96 are reserved for indicating the ISO/IEC 7064 modulo 37-2 check character on the Donation Identification Number—the value is assigned as 60 plus the modulo 37-2 checksum.
- Appendix A of the *ISBT 128 Technical Specification* (ST-001) demonstrates how to calculate the checksum character for a DIN.

3.2 Blood Groups [ABO and RhD] [Data Structure 002]

Purpose: Data Structure 002 EITHER

- Shall indicate the blood groups [ABO and RhD] of a product and
- May convey information regarding C, c, E, e, K, or Miltenberger phenotypes and/or
- May include information defining the type of collection

OR

- Shall convey special messages such as the status of a collection, restrictions on use, or processing instructions.

Structure: =%ggre

Table 2: Data Structure 002 Coding Values

Element	Length	Type
=	1	data identifier, first character
%	1	data identifier, second character
gg	2	alphanumeric {A–Z; a–z; 0–9}
r	1	alphanumeric {A–Z; 0–9}
e	1	alphanumeric {A–Z; 0–9}

For more information on Data Structure 002, see **section 2.4.2** of the *ISBT 128 Standard Technical Specification* (ST-001).

Considerations for Data Structure 002:

- A value of 0 (zero) in the third position of the data content [the “r” portion of “ggre”] indicates that the Data Structure 002 message does not contain information about Rh and Kell or Miltenberger phenotypes.
- The fourth position of the data content [the “e” portion of “ggre”] is reserved for future use and should be set to 0 (zero).

3.2.1 Valid Messages – Data Structure 002:

Examples 2.1 through 2.7:

- The following data content can be interpreted by reference to the "Blood Groups [ABO and RhD], Including Optional Type of Collection Information" table [RT005] found in the *ISBT 128 Standard Technical Specification* (ST-001).
  - These examples provide a sampling of blood group related messages that do not provide information pertaining to the type of collection.

Example 2.1:	**Data Identifier**	**Data Content**
	=%	9500
Complete message encoded in bar code: =%9500		

Example 2.2:	**Data Identifier**	**Data Content**
	=%	G600
Complete message encoded in bar code: =%G600		

Example 2.3:	**Data Identifier**	**Data Content**
	=%	0600
Complete message encoded in bar code: =%0600		

Example 2.4:	**Data Identifier**	**Data Content**
	=%	A000
Complete message encoded in bar code: =%A000		

Example 2.5:	Data Identifier	Data Content
	=%	F000
Complete message encoded in bar code: =%F000		

Example 2.6:	Data Identifier	Data Content
	=%	G000
Complete message encoded in bar code: =%G000		

Example 2.7:	Data Identifier	Data Content
	=%	O600
Complete message encoded in bar code: =%O600		

Examples 2.8 & 2.9:

- The following data content can be interpreted by reference to the "Blood Groups [ABO and RhD], Including Optional Type of Collection Information" table [RT005] found in the *ISBT 128 Standard Technical Specification* (ST-001).
    - These examples provide both blood group and type of collection related information.

Example 2.8:	Data Identifier	Data Content
	=%	9700
Complete message encoded in bar code: =%9700		

Example 2.9:	Data Identifier	Data Content
	=%	4700
Complete message encoded in bar code: =%4700		

Example 2.10:

- The following data content can be interpreted by reference to the "Data Structure 002: Special Messages" table [RT006] found in the *ISBT 128 Standard Technical Specification* (ST-001).

Example 2.10	Data Identifier	Data Content
	=%	Mr00
Complete message encoded in bar code: =%Mr00		

Examples 2.11 & 2.12:

- The following data content can be interpreted by reference to the following tables found in the *ISBT 128 Standard Technical Specification* (ST-001):
  - For "**gg**" of "ggre" – the "Blood Groups [ABO and RhD], Including Optional Type of Collection Information" table [RT005].
  - For "**r**" of "ggre" – the "Data Structure 002: Rh, Kell, and Mia/Mur Phenotypes" table [RT007].

Example 2.11:	Data Identifier	Data Content
	=%	51E0
Complete message encoded in bar code: =%51E0		

Example 2.12:	Data Identifier	Data Content
	=%	58L0
Complete message encoded in bar code: =%58L0		

3.2.2 Non-Compliant Messages – Structural

Example 2.13:

- Incorrect data identifier

Example 2.13	Data Identifier	Data Content
	=?	9500

Message encoded in bar code:
=?9500

Corrected message for comparison:
=%9500

Considerations:

- With the exception of Data Structure 001[5] and non-ICCBBA defined data structures,[6] the following applies to ISBT 128 data identifiers:
  - Two or three characters long
  - Begins with either "**=**" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 2.14:

- Incorrect data content length

Example 2.14	Data Identifier	Data Content
	=%	060

Message encoded in bar code:
=%060

Corrected message for comparison:
=%0600

Considerations:

- Although the interpretation of "e" of "ggre" has been reserved for future use, the data content string of Data Structure 002 is four characters long with the last character always being a 0 (zero).

[5] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*
[6] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 2.15:

- Incorrect data content length

Example 2.15	Data Identifier	Data Content
	=%	95000

Message encoded in bar code:
=%95000

Corrected message for comparison:
=%9500

Considerations:

- The data content string of Data Structure 002 is four characters long.

Example 2.16:

- Unallowable coding value used in the 3rd position of the data content string (“r” of “ggre”).

Example 2.16	Data Identifier	Data Content
	=%	58l0

Message encoded in bar code:
=%58l0

Corrected message for comparison:
=%58L0

Considerations:

- The 3rd position of a Data Structure 002 data content string may be any character in the set {A–Z; 0–9}—these coding values are defined in the “Data Structure 002: Rh, Kell, and Mia/Mur Phenotypes” table [RT007].
    - If the data structure does not contain information about Rh and Kell or Miltenberger phenotypes, the 3rd character of the data string should be set to 0 (zero).

3.2.3 Non-Compliant Messages – Invalid Data

Example 2.17:

- Use of undefined coding value in 1st and 2nd character of the data content string (“gg” of “ggre”).

Example 2.17	Data Identifier	Data Content
	=%	F200

Message encoded in bar code:
=%F200

Corrected message for comparison:
=%A200

Considerations:

- While “F2” is structurally compliant, it does not exist in the “Blood Groups [ABO and RhD], Including Optional Type of Collection Information” table [RT005] (a bounded list).

Example 2.18:

- Use of unapproved coding value in the undefined position of the data content string.

Example 2.18	Data Identifier	Data Content
	=%	950A

Message encoded in bar code:
=%950A

Corrected message for comparison:
=%9500

Considerations:

- While the letter A is an allowable coding value, the 4th data character position of Data Structure 002 (“e” of “ggre”) has been reserved for future use—the value of “e” shall always be set to 0 (zero).

3.3 Product Code [Data Structure 003]

Purpose: Data Structure 003 shall:

- Identify a product intended for human use
- Optionally encode information about the type of collection
- Encode whether or not the product has been divided

Structure: =<αooootds

Table 3: Data Structure 003 Coding Values

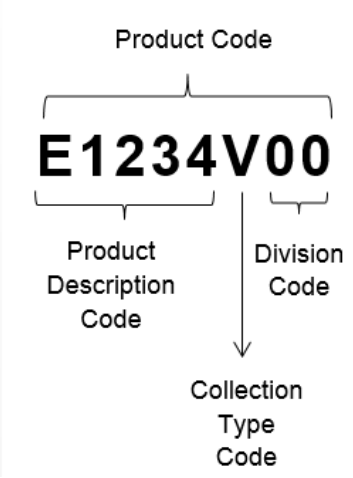
Element	Length	Type
=	1	data identifier, first character
<	1	data identifier, second character
α	1	alphabetic {A–Z}
oooo	4	alphanumeric {A–Z; 0–9}
t	1	alphanumeric {A–Z; a–z; 0–9} (depends on value of α)*
d	1	alphanumeric {A–Z; 0–9}, (depends on value of α)*
s	1	alphanumeric {a–z; 0–9} (depends on value of α)*

*See **Section 2.4.3** of the ISBT 128 Standard Technical Specification (ST-001) for additional information.

Considerations for Data Structure 003:

- "**αoooo**" is the Product Description Code, a 5-character alphanumeric string from the ICCBBA-maintained ISBT 128 Product Description Code Database or the Clinical Trials PDC Database which can be found on the ICCBBA website. E is the first character for blood products [for information on additional product types see section 2.4.3 of ST-001]. The following interpretation of t and ds applies where α is E.
  - "**t**" shall specify the type of collection (e.g., autologous, directed) and shall be encoded and interpreted according to Table RT008 of the *ISBT 128 Standard Technical Specification* (ST-001).
  - "**ds**" shall specify information as to whether the unit has been divided. If the unit has not been divided, "ds" shall be set to the default value of 00 (zero, zero).

Figure 3: Product Code Data Elements



Additional References:

- *Implementation Guide: Use of Product Code [Data Structure 003] - Blood* (IG-021)

3.3.1 Valid Messages – Data Structure 003

Note: Bar code examples for other product categories will be added to future versions of this document (IG-043).

Example 3.1: • Blood: The Product Code data content includes a Product Description Code (alpha character followed by four numeric characters), the default collection code (alpha character), and the default division code (numeric characters).			
Example 3.1	**Data Identifier**	**Data Content**	**Elements**
	=<	E0150V00	**Product Description Code (αoooo):** E0150 **Type of Collection Code (t):** V **Division Code (ds):** 00
Complete message encoded in bar code: =<E0150V00			
Example 3.2: • The data content includes a retired Product Description Code.			
Example 3.2	**Data Identifier**	**Data Content**	**Elements**

	=<	E0131V00	**Product Description Code (αoooo):** E0131 **Type of Collection Code (t):** V **Division Code (ds):** 00
Complete message encoded in bar code: =<E0131V00			

Considerations for Example 3.2	
Element of Product Code Data Structure (=<αooootds)	**Considerations**
PDC (αoooo)	Over time, codes may become inappropriate, redundant, or errors may be discovered. As a result, a mechanism exists to discontinue future use of these codes. However, because products may exist in inventories across the world, the codes must be retained in the database for backward compatibility. The "RETIREDATE" column of the Product Description Codes table of the ISBT 128 Product Description Code Database (ISBT 128 PDC Database) indicates the date on which ICCBBA recommended the codes no longer be used for new products. Software should be written to recognize these codes but not assign them to newly created products. It is understood that facilities must be given time to retire codes after ICCBBA has made its recommendation. Updated versions of the ISBT 128 PDC Database are released ten times per year (≈ on a monthly basis) on the ICCBBA website. Users are advised to visit the website periodically or to sign up for the ICCBBA newsletter to receive notifications regarding ISBT 128 related updates (e.g., updates to databases, publications, etc.).

Example 3.3:
Blood:

- Use of the Division Code—first-level divisions
- 7th and 8th position of the Product Code is an uppercase alpha character and numeric character respectively.

Example 3.3	Data Identifier	Data Content	Elements
	=<	E2756VA0	**Product Description Code (αoooo):** E2756 **Type of Collection Code (t):** V **Division Code (ds):** A0
Complete message encoded in bar code: =<E2756VA0			

Example 3.4:
Blood:

- Use of the Division Code—second-level divisions
- 7th and 8th position of the Product Code is an uppercase alpha character and lowercase alpha character respectively.

Example 3.4	Data Identifier	Data Content	Elements
	=<	E0624VBa	**Product Description Code (αoooo):** E0624 **Type of Collection Code (t):** V **Division Code (ds):** Ba
Complete message encoded in bar code: =<E0624Vba			

Considerations for Examples 3.3 & 3.4	
Element of Product Code Data Structure (=<αooootds)	**Considerations**
Division Code (ds)	If the Product Description Code begins with **E**, **F**, **X0**, **H**, **S**, or **P** then ds shall specify information as to whether the unit has been divided. Division Codes apply to units made by the division of a single container of a product into two or more parts that are identical—at the time of division—*except* for volume. Such units have the same Donation Identification Number and may have the same first six data characters of the eight-digit Product Code. The purpose of the seventh and eighth data characters is to provide a mechanism to distinguish each part (division) uniquely for tracking purposes. **Note:** In the case where the Product Description Code begins with H, S, or P, if the Product Divisions [Data Structure 032] is used, ds shall be set to 99. Software shall require that when a 99 appears in positions 7 and 8 of the Product Code [Data Structure 003], the Product Divisions Data Structure shall be scanned and recorded.

Example 3.5:
Blood:

- Use of the collection type code (non-default value; uppercase alpha character)
- An upper case alpha division code is used to represent the first-level division.

Example 3.5	Data Identifier	Data Content	Elements
	=<	E0023ST0	**Product Description Code (αoooo):** E0023 **Type of Collection Code (t):** S **Division Code (ds):** T0
Complete message encoded in bar code: =<E0023ST0			

Example 3.6:
Blood:

- Use of the collection type code involves a numeric character.

Example 3.6	Data Identifier	Data Content	Elements
	=<	E0098200	**Product Description Code (αoooo):** E0098 **Type of Collection Code (t):** 2 **Division Code (ds):** 00
Complete message encoded in bar code: =<E0098200			

Example 3.7:
Blood:

- Use of the collection type code involves a lowercase alpha character.

Example 3.7	Data Identifier	Data Content	Elements
	=<	E0112r00	**Product Description Code (αoooo):** E0112 **Type of Collection Code (t):** r **Division Code (ds):** 00
Complete message encoded in bar code: =<E0112r00			

Considerations for Examples 3.5–3.7

Element of Product Code Data Structure (=<αooootds)	Considerations
Collection Type Code (t)	If the Product Description Code begins with **E**, **F**, **X0**, **H**, **S**, **P**, or **YA** to **YZ** then t (the Collection Type Code [sometimes referred to as the Donation Type Code]) shall specify the type of collection and shall be encoded and interpreted by reference to Table RT008 of the *ISBT 128 Standard Technical Specification* (ST-001). Collection, processing, and transfusion services often find it useful to be able to distinguish collection types such as “autologous” and “directed” through the Product Code. The use of certain collection type codes may vary from country to country. An accrediting agency (or national authority) may regulate the use of certain collection/donation types. For instance, the US FDA does not allow the use of 0 (zero)—defined as “not specified”—as the collection type code for blood components.

Example 3.8:

- Use of an unassigned Product Description Code that begins with two alpha characters.

Example 3.8	Data Identifier	Data Content	Elements
	=<	EA001V00	**Product Description Code (αoooo):** EA001 **Type of Collection Code (t):** V **Division Code (ds):** 00
Complete message encoded in bar code: =<EA001V00			

Example 3.9:

- Use of a local code: α value of "A" followed by numeric characters

Example 3.9	Data Identifier	Data Content	Elements
	=<	A0005000	**Product Description Code (αoooo):** A0005 **Type of Collection Code (t):** n/a* **Division Code (ds):** n/a*
Complete message encoded in bar code: =<A0005000			

Example 3.10:

- Use of a national code: α value of "B" followed by an alpha character

Example 3.10	Data Identifier	Data Content	Elements
	=<	BA001000	**Product Description Code (αoooo):** BA001 **Type of Collection Code (t):** n/a* **Division Code (ds):** n/a*
Complete message encoded in bar code: =<BA001000			

Example 3.11:

- Use of a local code with allowable coding values for "tds".

Example 3.11	Data Identifier	Data Content	Elements
	=<	B23413A0	**Product Description Code (αoooo):** B2341 **"tds":** defined in conjunction with B2341
Complete message encoded in bar code: =<B23413A0			

Considerations for Example 3.9, 3.10, and 3.11	
Element of Product Code Data Structure (=<αooootds)	**Considerations**
Product Description Code (αoooo)	The block of Product Description Codes (PDCs) beginning with the alpha characters A-D (A0000–D9999 and AAAAA–DZZZZ) shall be reserved for use as nationally-defined or facility-defined Product Description Codes. **Note:** Certain coding sequences are designated for assignment by a national authority. For example, a code with α equaling A–C followed by one or more alpha characters (e.g., A0ZA3, BA001, CRUA5, etc.) is reserved for national assignment. See section 2.4.3 of the *ISBT 128 Standard Technical Specification* (ST-001) for information on reserved codes. Local codes should ONLY be used where there is not an appropriate international code and there is good reason why an international code should not be allocated. For example, local/facility codes should be used when a product is only produced in one or a very small number of facilities. *If there is any uncertainty whether the code assigned to a product should be an international code versus a nationally- or locally/facility-defined code, the user should contact the ICCBBA office (support@iccbba.org).* Where such codes are used, the facility shall ensure that definitions are provided for use within their service region and that products bearing such codes are not transferred outside their normal distribution network. Care shall be taken in interpreting the product description from a local/facility code as this will be specific to the supplier. Software systems reading a national or local/facility code should ensure that they interpret the code taking into account the source country/facility. In all cases, the product definition for nationally defined or facility/locally defined codes shall be retained permanently for traceability purposes. Once assigned, codes shall not be reassigned.
"tds"	*"tds" is not defined for nationally or facility defined PDCs (i.e., PDCs beginning with A–D). If "tds" is set to something other than 000, it shall be defined in conjunction with the nationally- or locally/facility-defined code assignment.

Example 3.12:
Blood:

- Use of an unassigned Product Description Code that begins with three alpha characters.

Example 3.12	Data Identifier	Data Content	Elements
	=<	EAA00V00	**Product Description Code (αoooo):** EAA00 **Type of Collection Code (t):** V **Division Code (ds):** 00
Complete message encoded in bar code: =<EAA00V00			

Example 3.13:
Cellular Therapy:

- Use of the collection type code (numeric character) for Cellular Therapy product.

Example 3.13	Data Identifier	Data Content	Elements
	=<	S1224100	**Product Description Code (αoooo):** S1224 **Type of Collection Code (t):** 1 **Division Code (ds):** 00
Complete message encoded in bar code: =<S1224100			

Example 3.14:
Tissue:

- If α is T, tds shall specify a 3-digit number of divisions/packs of the product. If multiple divisions/packs do not exist, tds shall be set to 000 (three zeroes).
- Use of the three-digit division pack sequence (Undivided)

Example 3.14	Data Identifier	Data Content	Elements
	=<	T1234000	**Product Description Code (αoooo):** T1234 **Division Pack (tds):** 000
Complete message encoded in bar code: =<T1234000			

Example 3.15:
Ocular Tissue:

- If α is V, tds shall specify a 3-digit number of divisions/packs of the product. If multiple divisions/packs do not exist, tds shall be set to 000 (three zeroes).
- Use of the three-digit division pack sequence (Divided)

Example 3.15	Data Identifier	Data Content	Elements
	=<	V0005002	**Product Description Code (αoooo):** V0005 **Division Pack (tds):** 002
Complete message encoded in bar code: =<V0005002			

Example 3.16 & 3.17:
Reproductive Products:

- If α is R, tds shall specify a 3-digit number of divisions/packs of the product. If multiple divisions/packs do not exist, tds shall be set to 000 (three zeroes).

Example 3.16	Data Identifier	Data Content	Elements
	=<	R0049000	**Product Description Code (αoooo):** R0049 **Division Pack (tds):** 000
Complete message encoded in bar code: =<R0049000			

Example 3.17	Data Identifier	Data Content	Elements
	=<	R0052006	**Product Description Code (αoooo):** R0052 **Division Pack (tds):** 006
Complete message encoded in bar code: =<R0052006			

Example 3.18 & 3.19:
Human Milk Products:

- If α is M, tds shall specify a 3-digit number of divisions/packs of the product. If multiple divisions/packs do not exist, tds shall be set to 000 (three zeroes).

Example 3.18	Data Identifier	Data Content	Elements
	=<	M0001002	**Product Description Code (αoooo):** M0001 **Division Pack (tds):** 002
Complete message encoded in bar code: =<M0001002			

Example 3.19	Data Identifier	Data Content	Elements
	=<	M0009000	**Product Description Code (αoooo):** M0009 **Division Pack (tds):** 000
Complete message encoded in bar code: =<M0009000			

Example 3.20:

- Blood, Plasma Derivative, Cellular Therapy, MPHO with an INN, Regenerated Tissue Products, and Clinical Trials Products:
  - If α is **E**, **F**, **H**, **S**, **P**, **X0**, or **YA** to **YZ**, the Product Code data content includes a Product Description Code (alpha character followed by four numeric characters), a collection code (alpha character), and a division code.
  - If the Divisions [Data Structure 032] is used in conjunction with the Product Code, 99 appears in positions 7 and 8 of the Product Code and software shall be written to require the Product Divisions data structure to be scanned and recorded.

Example 3.20	Data Identifier	Data Content	Elements
	=<	S3391V99	**Product Description Code (αoooo):** S3391 **Type of Collection Code (t):** V **Division Code (ds):** 99

Complete message encoded in bar code:
=<S3391V99

Considerations:

- α values of **E**, **F**, **H**, **S**, **P**, **X0**, or **YA** to **YZ** capture product divisions using alpha characters in the 7th and 8th positions of the Product Code allowing for 26 first level divisions and 26 second level divisions. If it is found that more than 26 divisions are needed, ds shall be encoded as 99, indicating division information is encoded in the Product Divisions [Data Structure 032].

3.3.2 Non-Compliant Messages – Structural

Example 3.21:

- Incorrect data identifier

Example 3.21	Data Identifier	Data Content
	=?	E0150V00

Message encoded in bar code:
=?E0150V00

Corrected message for comparison:
=<E0150V00

Considerations:

- With the exception of Data Structure 001[7] and non-ICCBBA defined data structures,[8] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "**=**" or "&" (ASCII character code 61 and 38 respectively).

[7] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[8] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

- The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
- "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.

- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 3.22:
- Incorrect data content length

Example 3.22	Data Identifier	Data Content
	=<	E2756

Message encoded in bar code:
=<E2756___

Corrected message for comparison:
=<E2756V00

Example 3.23:
- Incorrect data content length

Example 3.23	Data Identifier	Data Content
	=<	E0624V000

Message encoded in bar code:
=<E0624V000

Corrected message for comparison:
=<E0624V00

Considerations:
- The Data Structure 003 data content must be eight characters long.

Example 3.24:
Blood:
- Unallowable coding value used in the 8th position of the data content string ("s" of "αooootds").

Example 3.24	Data Identifier	Data Content
	=<	E2121VBA

Message encoded in bar code:
=<E2121VBA

Corrected message for comparison:
=<E2121VBa

Considerations:

- The 8th position of a Data Structure 003 data content string may be any character in the set {a-z; 0-9}.

3.3.3 Non-Compliant Messages – Invalid Data:

Example 3.25:
Blood:

- Use of an undefined coding value in the 6th position of the data content string ("t" of "αooootds").

Example 3.25	Data Identifier	Data Content
	=<	E2121Z00

Message encoded in bar code:
=<E2121Z00

Corrected message for comparison:
=<E2121V00

Considerations:

- While "Z" is a structurally compliant coding value, it does not exist in the "Type of Collection in 6th Position of Product Code" table [RT008] (a bounded list).

3.3.4 Non-Compliant Messages – Contextual Inconsistency:

Example 3.26:
Blood:

- Use of "99" for the 7th and 8th position of the data content string ("ds" of "αooootds").

Example 3.26	Data Identifier	Data Content
	=<	E2528V99

Message encoded in bar code:
=<E2528V99

Corrected message for comparison:
=<E2528VZ0

Considerations:

- While "99" is structurally compliant, its use does not apply to Product Description Codes (PDCs) for blood components (i.e., PDCs that begin with either E or F).
  - "99" indicates the use of the Product Divisions [Data Structure 032] which, at the current time, only applies to PDCs beginning with H, S, or P.

3.4 Expiration Date and Time [Data Structure 005]

Purpose: Data Structure 005 shall indicate the date and time of when the product expires.

Structure: &>cyyjjjhhmm

Table 4: Data Structure 005 Coding Values

Element	Length	Type
&	1	data identifier, first character
>	1	data identifier, second character
c	1	numeric {0–9}
yy	2	numeric {0–9}
jjj	3	numeric {0–9}
hh	2	numeric {0–9}
mm	2	numeric {0–9}

For more information on Data Structure 005, see **section 2.4.5** of the *ISBT 128 Standard Technical Specification* (ST-001).

Considerations for Data Structure 005:

- "jjj" (of "cyyjjjhhmm") shall specify the *ordinal (Julian) date* on which the product expires.
- A day shall be defined as beginning at midnight (00:00) and ending at 23:59. When a time is not specified, the default of "2359" shall be encoded in the data structure.

3.4.1 Valid Messages – Data Structure 005

Example 4.1:
- A leap year is used.
- A default value for time is used.

Example 4.1:	Data Identifier	Data Content
	&>	0163662359

Complete message encoded in bar code:
&>0163662359

Example 4.2:
- A non-leap year is used.
- A specified time is used.

Example 4.2:	Data Identifier	Data Content
	&>	0172221230

Complete message encoded in bar code:
&>0172221230

Example 4.3:
- A non-leap year is used.
- A specified time is used.

Example 4.3:	Data Identifier	Data Content
	&>	0180790001

Complete message encoded in bar code:
&>0180790001

3.4.2 Non-Compliant Messages – Structural

Example 4.4:

- Incorrect data identifier

Example 4.4	Data Identifier	Data Content
	&?	0160602359

Message encoded in bar code:
&?0160602359

Corrected message for comparison:
&>0160602359

Considerations:

- With the exception of Data Structure 001[9] and non-ICCBBA defined data structures,[10] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "**=**" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 4.5:

- Incorrect data content length

Example 4.5	Data Identifier	Data Content
	&>	016158

Message encoded in bar code:
&>016158____

Corrected message for comparison:
&>0161582359

[9] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[10] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 4.6:

- Incorrect data content length

Example 4.6	Data Identifier	Data Content
	&>	01725723590

Message encoded in bar code:
&>01725723590

Corrected message for comparison:
&>0172572359

Considerations:

- The Data Structure 005 data content must be ten characters long.

Example 4.7:

- Unallowable coding value used in the 1st and 8th position of the data content string.

Example 4.7	Data Identifier	Data Content
	&>	O162002o59

Message encoded in bar code:
&>O162002o59

Corrected message for comparison:
&>0162002059

Considerations:

- The Data Structure 005 data content must be comprised of numeric characters only.

3.5 Collection Date and Time [Data Structure 007]

Purpose: Data Structure 007 shall indicate the date and time of the collection or recovery of the product.

Structure: &*cyyjjjhhmm

Table 5: Data Structure 007 Coding Values

Element	Length	Type
&	1	data identifier, first character
*	1	data identifier, second character
c	1	numeric {0–9}
yy	2	numeric {0–9}
jjj	3	numeric {0–9}
hh	2	numeric {0–9}
mm	2	numeric {0–9}

For more information on Data Structure 007, see **section 2.4.7** of the *ISBT 128 Standard Technical Specification* (ST-001).

Considerations for Data Structure 007:

- "jjj" (of "cyyjjjhhmm") shall specify the *ordinal (Julian) date* on which the product expires.
- A day shall be defined as beginning at midnight (00:00) and ending at 23:59. When a time is not specified, the default of "2359" shall be encoded in the data structure.

3.5.1 Valid Messages – Data Structure 007

Example 5.1:

- The default value is used for time.

Example 5.1	Data Identifier	Data Content
	&*	0251502359

Complete message encoded in bar code:
&*0251502359

Examples 5.2:

- A specified time is used.

Example 5.2	Data Identifier	Data Content
	&*	0250100935

Complete message encoded in bar code:
&*0250100935

Example 5.3:

- A leap year is used.
- A specified time is used.

Example 5.3	Data Identifier	Data Content
	&*	0243661315

Complete message encoded in bar code:
&*0243661315

3.5.2 Non-Compliant Messages – Structural

Example 5.4:

- Incorrect data identifier

Example 5.4	Data Identifier	Data Content
	=*	0251672359

Message encoded in bar code:
=*0251672359

Corrected message for comparison:
&*0251672359

Considerations:

- With the exception of Data Structure 001[11] and non-ICCBBA defined data structures,[12] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "=" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 5.5:

- Incorrect data length

Example 5.5	Data Identifier	Data Content
	&*	025223

Message encoded in bar code:
&*025223____

Corrected message for comparison:
&*0252232359

Considerations:

- The Data Structure 003 data content must be eight characters long.

Example 5.6:

- Incorrect data length

Example 5.6	Data Identifier	Data Content
	&*	02505302359

Message encoded in bar code:
&*02505302359

Corrected message for comparison:
&*0250532359

Considerations:

- The Data Structure 003 data content must be eight characters long.

[11] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[12] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 5.7:

- Unallowable character encoded

Example 5.7	Data Identifier	Data Content
	&*	A251502359

Message encoded in bar code:
&*A251502359

Corrected message for comparison:
&*0251502359

Considerations:

- The Data Structure 007 content string specifies for numerical characters {0-9}.

3.5.3 Non-Compliant Messages – Invalid Data

Example 5.8:

- Invalid numeric values are used.

Example 5.8	Data Identifier	Data Content
	&*	0254002359

Message encoded in bar code:
&*0254002359

Corrected message for comparison:
&*0251502359

Considerations:

- While “400” is structurally compliant coding value, it does not exist as a valid Julian Date.

3.5.4 Non-Compliant Message – Contextual Inconsistency

Example 5.9:

- Incorrect century value is used.

Example 5.9	Data Identifier	Data Content
	&*	1251502359

Message encoded in bar code:
&*1251502359

Corrected message for comparison:
&*0251502359

Considerations:

- While “1” is structurally compliant, it would represent a year in which the century value is 1. That is to say the value “1” would be applicable for the years 2100-2199.

Example 5.10:

- Incorrect Julian date (non-leap year) is used.

Example 5.10	Data Identifier	Data Content
	&*	0253662359

Message encoded in bar code:
&*0253662359

Corrected message for comparison:
&*0253652359

Considerations:

- The use of a Julian date ‘366’ would only be applicable when the product encodes for a leap year (i.e., 2024, 2028, 2032, etc.). Users should ensure that correct Julian dates are being applied to products based on the year of collection.

3.6 Special Testing: General [Data Structure 010]

Purpose: Data Structure 010 shall indicate special characteristics of a product such as whether it has been phenotyped, the presence of antibodies, CMV antibody status, Hemoglobin S status, etc.

Structure: &(zzzzz

Table 6: **Data Structure 010 Coding Values**

Element	Length	Type
&	1	data identifier, first character
(	1	data identifier, second character
zzzzz	5	alphanumeric {A–Z; 0–9}

Considerations for Data Structure 010:

- The five (5)-character data content string, **zzzzz**, shall be encoded and interpreted by reference to the ICCBBA-maintained Special Testing General database which can be found on the ICCBBA website: https://iccbba.org/m-databases-ref-tables/.*

See **section 5.2 of the* ISBT 128 Standard Technical Specification *(*ST-001*) for additional information on the Special Testing General database [RT029].*

- To serve as an example, the following is an entry from the Special Testing General database:

Figure 4: Excerpt of Special Testing: General [RT029]

Codes			
NCODE	**INTERPRETATION**	**RETIREDATE**	**DEFINITION**
N0008	CMV seronegative		

3.6.1 Valid Messages – Data Structure 010

Examples 6.1 through 6.4:

- The following data content can be interpreted by reference to the "Special Testing: General" table [RT029] found on the ICCBBA website.

Example 6.1:	**Data Identifier**	**Data Content**
	&(	N0000
Complete message encoded in bar code: &(N0000		

Example 6.2:	**Data Identifier**	**Data Content**
	&(	N0008
Complete message encoded in bar code: &(N0008		

Example 6.3:	**Data Identifier**	**Data Content**
	&(	N0026
Complete message encoded in bar code: &(N0026		

Example 6.4:	**Data Identifier**	**Data Content**
	&(	N0127
Complete message encoded in bar code: &(N0127		

3.6.2 Non-Compliant Messages – Structural

Example 6.5:

- Incorrect data identifier

Example 6.5	Data Identifier	Data Content
	&?	N0008

Message encoded in bar code:
&?N0008

Corrected message for comparison:
&(N0008

Considerations:

- With the exception of Data Structure 001[13] and non-ICCBBA defined data structures,[14] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "**=**" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 6.6:

- Incorrect data content length

Example 6.6	Data Identifier	Data Content
	&(	N009

Message encoded in bar code:
&(N009_

Corrected message for comparison:
&(N0009

Example 6.7:

- Incorrect data content length

[13] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[14] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 6.7	Data Identifier	Data Content
	&(	N00008
Message encoded in bar code: &(N00008		
Corrected message for comparison: &(N0008		
Considerations: • The Data Structure 010 data content must be five characters long.		

Example 6.8:
- Unallowable coding value used in the 2nd position of the data content string.

Example 6.8	Data Identifier	Data Content
	&(	No009
Message encoded in bar code: &(No009		
Corrected message for comparison: &(N0009		
Considerations: • The Data Structure 010 data content must contain characters in the set {A–Z; 0–9} only.		

3.7 Special Testing: Red Blood Cell Antigens – General [Data Structure 012]

Purpose: Data Structure 012 shall provide information regarding red blood cell phenotypes,* CMV antibody, IgA, Parvovirus B19, Hemoglobin S, and/or a nationally specified characteristic of the product.

**Phenotype: The observable expression of the genes inherited by a person that reflects the biological activity of the genes. In ISBT 128 coding of test results, the term phenotype includes predicted phenotypes based on genotyping where there is evidence in the literature to support such a prediction.*

Structure: =\aaaaaaaaaaaaaaaaii

Table 7: Data Structure 012 Coding Values

Element	Length	Type
=	1	data identifier, first character
\	1	data identifier, second character
aaaaaaaaaaaaaaaa	16	numeric {0–9}
ii	2	numeric {0–9}

For more information on Data Structure 012, see **section 2.4.12** of the *ISBT 128 Standard Technical Specification* (ST-001).

Considerations for Data Structure 012:

- The eighteen (18)-character data content string, **aaaaaaaaaaaaaaaaii**, shall be encoded and interpreted by reference to the following tables in the *ISBT 128 Standard Technical Specification* (ST-001):
- "Special Testing: Red Blood Cell Antigens — General, Positions 1 through 9" [RT009]—this includes the coding values for positions 10 through 16 as well.**

  Common Rh antigens may be encoded together as a phenotype (Rh column 1 [for position 1 of the data content]) or as individual Rh antigens (C,c,E,e, columns 14–16 [for positions 14–16 of the data content]). If Rh antigens are encoded individually using positions 14, 15, and/or 16, then the value of column one shall be set to 9 (no information). Conversely, if the phenotype is present in column 1, then the values of the C,c,E,e antigens shall all be set to 9, ni (no information). For examples, see* ***section 9.1 *of the* ISBT 128 Standard Technical Specification *(*ST-001*).*

- "Special Testing: Red Blood Cell Antigens — General, Positions 17 and 18: Erythrocyte Antigen Specified Has Been Tested for and Found Negative" [RT011].***

****If there are Red Blood Cell antigens test results that cannot be encoded using RT009 or RT011, positions 17 and 18 of the data content string may be set to 00 [interpreted as "information elsewhere" in RT011]. Alternatively, red cell antigens not found on these tables may be encoded using the Red Cell Antigens with Test History [Data Structure 030].*

3.7.1 Valid Messages – Data Structure 012:

Examples 7.1 through 7.3:

- The following data content can be interpreted by reference to RT009 and RT011 found in the *ISBT 128 Standard Technical Specification* (ST-001).

Example 7.1:	Data Identifier	Data Content
	=\	979999999999924799
Complete message encoded in bar code: =\979999999999924799		
Example 7.2:	**Data Identifier**	**Data Content**
	=\	6799999999999999996
Complete message encoded in bar code: =\6799999999999999996		
Example 7.3:	**Data Identifier**	**Data Content**
	=\	880000008700000100
Complete message encoded in bar code: =\880000008700000100		

3.7.2 Non-Compliant Messages – Structural

Example 7.4:

- Incorrect data identifier

Example 7.4	Data Identifier	Data Content
	=?	979999999999924799
Message encoded in bar code: =?979999999999924799		
Corrected message for comparison: **=**979999999999924799		

Considerations:

- With the exception of Data Structure 001[15] and non-ICCBBA defined data structures,[16] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "**=**" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 7.5:

- Incorrect data content length

Example 7.5	Data Identifier	Data Content
	=\	9799999999999247
Message encoded in bar code: =\9799999999999247		
Corrected message for comparison: =\979999999999924799		

Example 7.6:

- Incorrect data content length

[15] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[16] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 7.6	Data Identifier	Data Content
	=\	9799999999999247999
Message encoded in bar code: =\9799999999999247999		
Corrected message for comparison: =\97999999999924799		
Considerations: • The data content string of Data Structure 012 is eighteen characters long.		

Example 7.7:
- Unallowable coding value used in the 2nd position of the data content string.

Example 7.7	Data Identifier	Data Content
	=\	B79999999999924799
Message encoded in bar code: =\B79999999999924799		
Corrected message for comparison: =\979999999999924799		
Considerations: • The data content string for Data Structure 012 should contain numeric characters only.		

3.7.3 Non-Compliant Messages – Contextual Inconsistency

Example 7.8:
- The same antigen results are encoded twice.

Example 7.8	Data Identifier	Data Content
	=\	679999999999924799
Message encoded in bar code: =\6799999999999247 99		
Corrected messages for comparison: =\979999999999924799 =\679999999999999999		

Example 7.9:

- The same antigen results are encoded twice, and the results are conflicting.

Example 7.9	Data Identifier	Data Content
	=\	679999999999914799

Message encoded in bar code:
=\6799999999999147 99

Corrected messages for comparison:
=\9799999999999247 99

=\6799999999999999 99

Considerations:

- If Rh antigens are encoded individually using positions 14, 15, and/or 16, then the value of column one [first position of the data content string] shall be set to 9 (no information). Conversely, if the phenotype is present in column one [first position of the data content string], then the values of the C,c,E,e antigens shall all be set to 9, ni (no information).

- The decoded “corrected messages for comparison” (above) should both have the same interpretation: *C+c-E-e+, K+k-, no other information*.

3.8 Special Testing: Platelet HLA and Platelet Specific Antigens [Data Structure 014]

Purpose: Data Structure 014 shall provide information regarding HLA and HPA phenotypes, CMV antibody, IgA status, and anti-A and -B for platelet products. If genomic typing is used, only the first two digits of the type shall be encoded.

Structure: &{AAAABBBBCCCCCCCCDE

Table 8: **Data Structure 014 Coding Values**

Element	Length	Type
&	1	data identifier, first character
{	1	data identifier, second character
AAAA	4	numeric {0–9}
BBBB	4	numeric {0–9}
CCCCCCCC	8	numeric {0–9}
D	1	numeric {0–9}
E	1	numeric {0–9}

For more information on Data Structure 014, see **section 2.4.14** of the *ISBT 128 Standard Technical Specification* (ST-001).

Considerations for Data Structure 014:

- The eighteen (18)-character data content string, **AAAABBBBCCCCCCCCDE**, shall be encoded and interpreted by reference to the following tables in the *ISBT 128 Standard Technical Specification* (ST-001):
    - For **AAAA** and **BBBB** of the data content string, the coding values from the "Special Testing: Platelet HLA and Platelet-Specific Antigens, Positions 1 through 8" table [RT013] will be used to specify HLA-A antigens and HLA-B antigens respectively.*
        **Two AA values shall be encoded first in ascending order. This would then be followed by two BB values in ascending order. For examples, see section 9.2 of the* ISBT 128 Standard Technical Specification *(ST-001).*
    - For **CCCCCCCC** of the data content string, the coding values from the "Special Testing: Platelet HLA and Platelet-Specific Antigens, Positions 9 through 16" table [RT014] will be used to specify platelet-specific antigens, IgA antigen and CMV antibody status.

- **D** of the data content string is reserved for future use and should be encoded with a 0 (zero) at the current time.

- For **E** of the data content string, the coding values from the "Special Testing: Platelet HLA and Platelet Specific Antigens, Position 18" table [RT044] will be used to specify information about high titered antibodies to A and B antigens.

3.8.1 Valid Messages – Data Structure 014:

Examples 8.1 through 8.7:

- The following data content can be interpreted by reference to RT013, RT014, and RT044 found in the *ISBT 128 Standard Technical Specification* (ST-001).

Example 8.1:	**Data Identifier**	**Data Content**
	&{	029907999999999900
Complete message encoded in bar code: &{029907999999999900		
Example 8.2:	**Data Identifier**	**Data Content**
	&{	020207079999999900
Complete message encoded in bar code: &{020207079999999900		
Example 8.3:	**Data Identifier**	**Data Content**
	&{	022408279999999900
Complete message encoded in bar code: &{022408279999999900		

Example 8.4:	**Data Identifier**	**Data Content**
	&{	999999993999999900
Complete message encoded in bar code: &{999999993999999900		
Example 8.5:	**Data Identifier**	**Data Content**
	&{	999999999999999400
Complete message encoded in bar code: &{999999999999999400		
Example 8.6:	**Data Identifier**	**Data Content**
	&{	029907999999999901
Complete message encoded in bar code: &{029907999999999901		
Example 8.7:	**Data Identifier**	**Data Content**
	&{	020207079999999901
Complete message encoded in bar code: &{020207079999999901		

3.8.2 Non-Compliant Messages – Structural

Example 8.8:

- Incorrect data identifier

Example 8.8	Data Identifier	Data Content
	&?	029907999999999900

Message encoded in bar code:
&?029907999999999900

Corrected message for comparison:
&{029907999999999900

Considerations:

- With the exception of Data Structure 001[17] and non-ICCBBA defined data structures,[18] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "**=**" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 8.9:

- Incorrect data content length

Example 8.9	Data Identifier	Data Content
	&{	0224082799999999

Message encoded in bar code:
&{0224082799999999

Corrected message for comparison:
&{022408279999999900

[17] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[18] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 8.10:

- Incorrect data content length

Example 8.10	Data Identifier	Data Content
	&{	9999999999999994000
Message encoded in bar code: &{99999999999999940000		
Corrected message for comparison: &{999999999999999400		

Considerations:

- The Data Structure 014 data content must be eighteen characters long.

Example 8.11:

- Unallowable coding values used in the 5th and 18th position of the data content string.

Example 8.11	Data Identifier	Data Content
	&{	0299O799999999990L
Message encoded in bar code: &{0299O799999999990L		
Corrected message for comparison: &{0299079999999999 01		

Considerations:

- The Data Structure 014 data content must contain numeric characters only.

3.8.3 Non-Compliant Messages – Invalid Data

Example 8.12:

- Use of undefined coding value in 3rd and 4th character of the data content string (undefined value of AA).

Example 8.12	Data Identifier	Data Content
	&{	020407999999999900
Message encoded in bar code: &{020407999999999900		
Corrected message for comparison: &{029907999999999900		

Considerations:

- While “04” is structurally compliant, it does not exist in the “Special Testing: Platelet HLA and Platelet-Specific Antigens, Positions 1 through 8” table [RT013] (a bounded list).

Example 8.13:

- Use of unapproved coding value in the undefined position of the data content string.

Example 8.13	Data Identifier	Data Content
	&{	020207079999999990

Message encoded in bar code:
&{020207079999999990

Corrected message for comparison:
&{020207079999999900

Considerations:

- While “9” is an allowable coding value, the 17th position of the Data Structure 014 data content (“D” of “AAAABBBBCCCCCCCC**D**E”) has been reserved for future use. The value of “D” shall be set to 0 (zero).

Example 8.14:

- Incorrect use of a coding value that is reserved for future assignment.

Example 8.14	Data Identifier	Data Content
	&{	022408279999999903

Message encoded in bar code:
&{022408279999999903

Corrected message for comparison:
&{022408279999999900

Considerations:

- While “3” is structurally compliant, Table RT044 (a bounded list) specifies that values “2” through “8” are reserved for future assignment.

3.8.4 Non-Compliant Messages – Contextual Inconsistency

Example 8.15:

- The defined coding values are out of order.

Example 8.15	Data Identifier	Data Content
	&{	240227089999999900

Message encoded in bar code:
&{240227089999999900

Corrected message for comparison:
&{022408279999999900

Considerations:

- While “24” and “02” are allowable coding values for each “AA”, “AA” values are required to be listed in ascending order.
- While “27” and “08” are allowable coding values for each “BB”, “BB” values are required to be listed in ascending order.

3.9 Compound Message [Data Structure 023]

Purpose: Data Structure 023 shall allow multiple data structures to be combined into a single data string to facilitate use of newer technology delivery systems.

Structure: =+aabbb

Table 9: **Data Structure 023 Coding Values**

Element	Length	Type
=	1	data identifier, first character
+	1	data identifier, second character
aa	2	numeric {0–9}
bbb	3	numeric {0–9}

For more information on Data Structure 023, including the rules for constructing compound messages, see **section 2.4.23** of the *ISBT 128 Standard Technical Specification* (ST-001).

Considerations for Data Structure 023:

- The five (5)-character data content string, **aabbb**, shall be encoded and interpreted as follows:
  - **aa** shall specify the number of ISBT 128 data structures that follow;
  - **bbb** shall be either:
    - all zeroes – 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 the ICCBBA-Specified Compound Messages table [RT017] found on the ICCBBA website: https://iccbba.org/public-access-databases-reference-tables/

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.

- Reading software should be able to interpret both unspecified sequence and 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.

Additional References:

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

3.9.1 Valid Messages – Data Structure 023

Examples 9.1 through 9.4:
- The following are examples of undefined compound messages.

Example 9.1:	Data Identifier	Data Content
	=+	03000=W00001712345600=<E0150V00&*0170612359
Complete message encoded in bar code: =+03000=W00001712345600=<E0150V00&*0170612359		

Example 9.2:	Data Identifier	Data Content
	=+	03000=W00001712345600=%5100=<E3046V00
Complete message encoded in bar code: =+03000=W00001712345600=%5100=<E3046V00		

Example 9.3:	Data Identifier	Data Content
	=+	05000=A99991700007800=%9500&>0172002359=<E0311V00 =\979999999999924799
Complete message encoded in bar code: =+05000=A99991700007800=%9500&>0172002359=<E0311V00=\979999999999924799		

Example 9.4:	Data Identifier	Data Content
	=+	05000=A99991700000501=%5100=<E2756VA0&>0171552359 &(N0008
Complete message encoded in bar code: =+05000=A99991700000501=%5100=<E2756VA0&>0171552359&(N0008		

Considerations:

- The rules for constructing compound messages can be found in **section 2.4.23** of the *ISBT 128 Standard Technical Specification* (ST-001).

Examples 9.5 and 9.7:

- The following are examples of ICCBBA-specified compound messages.

Example 9.5:	**Data Identifier**	**Data Content**
	=+	04003=A99991756321300=%9500=<E2121V00&>0172221230
Complete message encoded in bar code: =+04003=A99991756321300=%9500=<E2121V00&>0172221230		

Example 9.6:	**Data Identifier**	**Data Content**
	=+	05009=A99991700000501=%5100=<E2756VA0&>0171552359 &(N0008
Complete message encoded in bar code: =+05009=A99991700000501=%5100=<E2756VA0&>0171552359&(N0008		

Example 9.7:	**Data Identifier**	**Data Content**
	=+	04000=A99962312345600=<S1303100&>0231501216&/CHA999222123456
Complete message encoded in bar code: =+04000=A99962312345600=<S1303100&>0231501216&/CHA999922123456		

Considerations:

- The ICCBBA-Specified Compound Messages table [RT017] (found on the ICCBBA website) provides the sequence of the data structures for a given ICCBBA-specified compound message.

  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.

3.9.2 Non-Compliant Messages – Structural

Example 9.8:

- Incorrect data identifier

Example 9.8	Data Identifier	Data Content
	=?	04000=A99991756321300=%9500=<E2121V00&>0172221230

Message encoded in bar code:
=?04000=A99991756321300=%9500=<E2121V00&>0172221230

Corrected message for comparison:
=+04000=A99991756321300=%9500=<E2121V00&>0172221230

Considerations:

- With the exception of Data Structure 001[19] and non-ICCBBA defined data structures,[20] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "**=**" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 9.9:

- Incorrect data content length

Example 9.9	Data Identifier	Data Content
	=+	0300=W00001712345600=<E0150V00&*0170612359

Message encoded in bar code:
=+0300_=W00001712345600=<E0150V00&*0170612359

Corrected message for comparison:
=+03000=W00001712345600=<E0150V00&*0170612359

Example 9.10:

- Incorrect data content length

[19] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[20] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 9.10	Data Identifier	Data Content
	=+	050000=A99991700000500=%5100=<E2756VA0&>0171552359&(N0008
Message encoded in bar code: =+050000=A99991700000500=%5100=<E2756VA0&>0171552359&(N0008		
Corrected message for comparison: =+05000=A99991700000500=%5100=<E2756VA0&>0171552359&(N0008		
Considerations: • The Data Structure 023 data content must be five characters long.		

Example 9.11: • Unallowable coding value used in the 1st position of the data content.		
Example 9.11	**Data Identifier**	**Data Content**
	=+	o5000=A99991700007800=%9500&>0172002359=<E0311V00=\979999999999924799
Message encoded in bar code: =+o5000=A99991700007800=%9500&>0172002359=<E0311V00=\979999999999924799		
Corrected message for comparison: =+05000=A99991700007800=%9500&>0172002359=<E0311V00=\979999999999924799		
Considerations: • The Data Structure 023 data content must contain numeric characters only.		

3.9.3 Non-Compliant Messages – Contextual Inconsistency

Example 9.12: • The data structures of the ICCBBA-specified compound message are out of sequence.		
Example 9.12	**Data Identifier**	**Data Content**
	=+	04003=A99991756321300=<E2121V00&>0172221230=%9500
Message encoded in bar code: =+04003=A99991756321300=<E2121V00&>0172221230=%9500		
Corrected message for comparison: =+04003=A99991756321300=%9500=<E2121V00&>0172221230		
Considerations: • For ICCBBA-specified compound messages, the order of the data structures shall be that shown in the ICCBBA-Specified Compound Messages table [RT017] for the reference number selected.		

Examples 9.13 and 9.14:

- The number of data structures that follow the Compound Message [Data Structure 023] in the data string is inconsistent with the number of data structures specified in the Compound Message [Data Structure 023].

Example 9.13	Data Identifier	Data Content
	=+	04000=A99991742565600=%5100=<E3046V00
Message encoded in bar code: =+04000=A99991742565600=%5100=<E3046V00		
Corrected message for comparison: =+03000=A99991742565600=%5100=<E3046V00		

Example 9.14	Data Identifier	Data Content
	=+	03000=A99971756321300=%9500=<E2121V00&>0172221230
Message encoded in bar code: =+03000=A99971756321300=%9500=<E2121V00&>0172221230		
Corrected message for comparison: =+04000=A99971756321300=%9500=<E2121V00&>0172221230		

Considerations:

- The first two characters of the Compound Message [Data Structure 023] data content shall specify the number of ISBT 128 data structures that follow.

3.10 Flexible Date and Time [Data Structure 031]

Purpose: Data Structure 031 shall convey information about date and time, including the type of time (collection, recovery, production, cross clamp, etc.) and the time zone (local or UTC).

Structure: =(ZUTTYYYYMMDDhhmm

Table 10: Data Structure 031 Coding Values

Element	Length	Type
=	1	data identifier, first character
(	1	data identifier, second character
Z	1	numeric {0-9}
U	1	numeric {0-9}
TT	2	numeric {0-9}
YYYY	4	numeric {0-9}
MM	2	numeric {0-9}
DD	2	numeric {0-9}
hh	2	numeric {0-9}
mm	2	numeric {0-9}

For more information on Data Structure 031, see section **2.4.31** of the *ISBT 128 Standard Technical Specification* (ST-001).

Considerations for Data Structure 031:

- The character 'Z' within the data content string shall specify if the presented time is captured using local time or UTC.

Additional References:

- *Implementation Guide: Use of the Flexible Date and Time [Data Structure 031]* (IG-024)

3.10.1 Valid Messages – Data Structure 031

Example 10.1 – 10.6:

- The following data content can be interpreted using reference tables RT045 and RT046.

Example 10.1	Data Identifier	Data Content
	=(	1002202501011130
Complete message encoded in bar code: =(1002202501011130		
	Data Identifier	**Data Content**

Example 10.2		
	=(	1003202501310930
Complete message encoded in bar code: =(1003202501310930		

Example 10.3	**Data Identifier**	**Data Content**
	=(	2005202503281245
Complete message encoded in bar code: =(2005202503281245		

Example 10.4	**Data Identifier**	**Data Content**
	=(	2001202512312359
Complete message encoded in bar code: =(2001202512312359		

Example 10.5	**Data Identifier**	**Data Content**
	=(	1006202501081927
Complete message encoded in bar code: =(1006202501081927		

Example 10.6	**Data Identifier**	**Data Content**
	=(	2004202502031010
Complete message encoded in bar code: =(2004202502031010		

3.10.2 Non-Compliant Messages – Structural

Example 10.7:

- Incorrect data identifier

Example 10.7	Data Identifier	Data Content
	=?	2001202512312359

Message encoded in bar code:
=?2001202512312359

Corrected message for comparison:
=(2001202512312359

Considerations:

- With the exception of Data Structure 001[21] and non-ICCBBA defined data structures,[22] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "**=**" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 10.8:

- Incorrect data content length

Example 10.8	Data Identifier	Data Content
	=(	200120251231

Message encoded in bar code:
=(200120251231____

Corrected message for comparison:
=(2001202512312359

Considerations:

- Data content for Data Structure 031 must be 16 characters.

[21] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*
[22] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 10.9:

- Incorrect data content length

Example 10.9	Data Identifier	Data Content
	=(	200120251231235930

Message encoded in bar code:
=(200120251231235930

Corrected message for comparison:
=(2001202512312359

Considerations:

- Data content for Data Structure 031 must be 16 characters.

Example 10.10:

- Unallowable character encoded

Example 10.10	Data Identifier	Data Content
	=(	20012025DC312359

Message encoded in bar code:
=(20012025DC312359

Corrected message for comparison:
=(2001202512312359

Considerations:

- Numeric values are allowable coding values for Data Structure 031.

3.10.3 Non-Compliant Messages – Invalid Data

Example 10.11:

- Use of invalid time values

Example 10.11	Data Identifier	Data Content
	=(	2001202512312400

Message encoded in bar code:
=(2001202512312400

Corrected message for comparison:
=(2001202512310000

Considerations:

- Data structure 031 specifies that hours are captured using the range “00 – 23” and minutes are captured using the range “00 – 59”.

Example 10.12:

- Use of undefined values within position 1 of data structure 031.

Example 10.12	Data Identifier	Data Content
	=(	3001202512312359

Message encoded in bar code:
=(3001202512312359

Corrected message for comparison:
=(2001202512312359

Considerations:

- Reference table RT045 defines the values that can be encoded within the 1st position of data structure 031.

Example 10.13:

- Use of undefined values within position 3 & 4 of data structure 031.

Example 10.13	Data Identifier	Data Content
	=(	2010202512312359

Message encoded in bar code:
=(20102025123123 59

Corrected message for comparison:
=(2001202512312359

Considerations:

- Reference table RT046 defines the values that can be encoded within the 3rd & 4th positions of data structure 031.

Example 10.14:

- Incorrect value encoded in position 2, which is reserved for future assignment.

Example 10.14	Data Identifier	Data Content
	=(	2101202512312359

Message encoded in bar code:
=(2101202512312359

Corrected message for comparison:
=(2001202512312359

Considerations:

- The 2nd character within Data Structure 031 is currently reserved for future assignment and shall be set to “0”.

3.10.4 Non-Compliant Messages – Contextual Inconsistency

Example 10.15:

- Use of inappropriate values within position 9, 10, 11 & 12 of Data Structure 031.

Example 10.15	Data Identifier	Data Content
	=(	2001202515352359

Message encoded in bar code:
=(2001202515352359

Corrected message for comparison:
=(2001202512312359

Considerations:

- Although structurally compliant, the included numerical values do not correspond to a defined date.

Example 10.16:

- The encoded content specifies a future year for a collection date and time.

Example 10.16	Data Identifier	Data Content
	=(	2002203508252359

Message encoded in bar code:
=(2002203508252359

Corrected message for comparison:
=(2002202508252359

Considerations:

- Although structurally compliant, specification of a future year when Data Structure 031 specifies for a collection date and time would not be appropriate.

Example 10.17:

- The encoded content specifies a future year for a production date and time.

Example 10.17	Data Identifier	Data Content
	=(	2003204106061235

Message encoded in bar code:
=(2003204106061235

Corrected message for comparison:
=(2003202506061235

Considerations:

- Although structurally compliant, specification of a future year when Data Structure 031 specifies for a production date and time would not be appropriate.

Example 10.18:

- The encoded content specifies a future year for a cross-clamp date and time.

Example 10.18	Data Identifier	Data Content
	=(	2004203603281425

Message encoded in bar code:
=(2004203603281425

Corrected message for comparison:
=(2004202503281425

Considerations:

- Although structurally compliant, specification of a future year when Data Structure 031 specifies for a cross clamp date and time would not be appropriate.

Example 10.19:

- The encoded content specifies a future year for a time of preservation.

Example 10.19	Data Identifier	Data Content
	=(	2005210007161425

Message encoded in bar code:
=(2005210007161425

Corrected message for comparison:
=(2005202507161425

Considerations:

- Although structurally compliant, specification of a future year when Data Structure 031 specifies for a preservation time would not be appropriate.

Example 10.20:

- The encoded content specifies a future year for a time of death.

Example 10.20	Data Identifier	Data Content
	=(	2006212508081729

Message encoded in bar code:
=(2006212508081729

Corrected message for comparison:
=(2006202508081729

Considerations:

- Although structurally compliant, specification of a future year when Data Structure 031 specifies for a time of death would not be appropriate.

Example 10.21:

- The encoded content specifies incorrect date (non-leap year).

Example 10.21	Data Identifier	Data Content
	=(	1002202502290900

Message encoded in bar code:
=(1002202502290900

Corrected message for comparison:
=(1002202503010900

Considerations:

- The month and day '0229' (February 29th) is specified however this date would only be applicable when a leap year (i.e., 2024, 2028, 2032, etc.) is encoded. Users should ensure that correct dates are being applied to products based on the year of collection.

3.11 Product Divisions [Data Structure 032]

Purpose: Data Structure 032 shall convey information about:

- aliquots, or
- one or more individual collections from the donor within the same donation event.

The Product Divisions Code may represent:

- one of the subunits from a single container that has been divided. This can also be referred to as an aliquot or a split.
- one of the containers from a collection, where the volume of product collected required the use of more than one container.
- a single collection into a single container.

When used in conjunction with Data Structure 003:Because this data structure becomes part of the unique identification of a product, implementation of the data structure must be coordinated so that computer systems of facilities receiving the product are able to scan and interpret the codes.

This data structure may be used for Cellular Therapy or Regenerated Tissue products if:

- a product will remain within the facility that labeled it with this data structure,

OR

- there is an agreement between the supplier and the receiver of a product to utilize this data structure sooner.

Note: At the present time, use of the Product Divisions data structure with Data Structure 003 is restricted to Cellular Therapy and Regenerated Tissue Product Codes (where α is S and P, respectively) and for products identified using Data Structure 034. However, in the future the use of the Product Divisions Data Structure may be extended to blood products (where α is E or F).

When used in conjunction with Data Structure 034: This data structure may be used at any time.

Structure: =,dddddd

Table 11: Data Structure 032 Coding Values

Element	Length	Type
=,	2	data identifiers
dddddd	6	alphanumeric {A-Z; 0-9}

Considerations for Data Structure 032:

- Digits shall be used where a single level of divisions is required (allowing up to 999,999 divisions).
- If it is desirable to show levels of divisions (to allow for divisions of divisions), alpha characters shall be used. In this situation, the six character field may be split into three pairs, each allowing AA through to ZZ. This provides up to three levels of division.
- When the Product Divisions data structure is used in conjunction with the Product
- Code [Data Structure 003], “99” shall appear in the 7th and 8th positions of the
- Product Code.
- The Product Divisions data structure, when used, is essential for traceability.
- Software shall require that when a 99 appears in positions 7 and 8 of the Product Code [Data Structure 003], the Product Divisions data structure shall be scanned and recorded.
- If manual records are maintained, the Divisions Code shall be recorded along with the DIN and the Product Code for all records required for traceability.
- Each Product Divisions code shall be unique for a given Product Code [Data Structure 003] and DIN.

Additional References:

- For use of this data structure in conjunction with the Product Code [Data Structure 003], see *Implementation Guide: Use of Product Divisions [Data Structure 032]* (IG-023).
- For use of this data structure in conjunction with the Processor Product Identification Code [Data Structure 034], see *ISBT 128 Standard Coding and Labeling of Medical Devices Containing MPHO* (ST-017) or, for US facilities, ISBT 128 Standard Coding and Labeling of Medical Devices Using ISBT 128 (ST-011) .
- *ISBT 128 Standard Labeling of Reproductive Tissue and Cell Products* (ST-019)

3.11.1 Valid messages – Data Structure 032

Example 11.1 & 11.2:

- Numeric values are used to signify simple, single levels of divisions.

Example 11.1	Data Identifier	Data Content
	=,	000086
Complete message encoded in bar code: =,000086		
Example 11.2	**Data Identifier**	**Data Content**

	=,	010329
Complete message encoded in bar code: =,010329		

Example 11.3 & 11.4: • Alpha values and 0s (zeros) are used to signify 1 level of hierarchical product divisions.		
Example 11.3	**Data Identifier**	**Data Content**
	=,	AA0000
Complete message encoded in bar code: =,AA0000		
Example 11.4	**Data Identifier**	**Data Content**
	=,	JB0000
Complete message encoded in bar code: =,JB0000		
Example 11.5 & 11.6: • Alpha values and 0s (zeros) are used to signify two levels of hierarchical product divisions.		
Example 11.5	**Data Identifier**	**Data Content**
	=,	LGED00
Complete message encoded in bar code: =,LGED00		
Example 11.6	**Data Identifier**	**Data Content**
	=,	PQWG00
Complete message encoded in bar code: =,PQWG00		
Example 11.7 & 11.8: • Alpha values are used to signify three levels of hierarchical product divisions.		
Example 11.7	**Data Identifier**	**Data Content**

	=,	AZCCAM
Complete message encoded in bar code: =,AZCCAM		

Example 11.8	Data Identifier	Data Content
	=,	GGGGVR
Complete message encoded in bar code: =,GGGGVR		

3.11.2 Non-compliant messages – Structural

Example 11.9:

- Incorrect data identifier

Example 11.9	Data Identifier	Data Content
	=’	000123
Message encoded in bar code: =’000123		
Corrected message for comparison: =,000123		

Considerations:

- With the exception of Data Structure 001[23] and non-ICCBBA defined data structures,[24] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either “=” or “&” (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - “&,” (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 11.10:

- Incorrect data length

Example 11.10	Data Identifier	Data Content

[23] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[24] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

	=,	0008
Message encoded in bar code: =,0008		
Corrected message for comparison: =,000008		
Considerations: • Data content for data structure 032 must be 6 characters.		

Example 11.11: • Unallowable character encoded		
Example 11.11	**Data Identifier**	**Data Content**
	=,	AAARbc
Message encoded in bar code: =,AAARbc		
Corrected message for comparison: =,AAARBC		
Considerations: • Data content for data structure 032 must be composed of capital Alpha characters when alpha characters are used to signify hierarchical levels of divisions.		

3.11.3 Non-Compliant Examples – Invalid Data

Example 11.12: • Both numeric and alpha characters are included to capture divisions		
Example 11.12	**Data Identifier**	**Data Content**
	=,	A1B200
Message encoded in bar code: =,A1B200		
Corrected message for comparison: =,AABB00		
Considerations: • For data structure 032, numeric characters shall be used for a single level of division, while Alpha characters shall be used for up to three levels of hierarchical divisions.		

3.12 Processing Facility Information Code [Data Structure 033]

Purpose: Data Structure 033 shall convey information about the facility that assigned the Product Code, and may include a Facility-defined Product Code (FPC) assigned by the processing or labeling facility.

Structure:&+nnnnnppppp

Table 12: Data Structure 033 Coding Values

Element	Length	Type
&+	2	data identifiers
nnnnn	1	alphanumeric {A-N; P-Z; 1-9}
nnnnnn	6	alphanumeric {A-Z; 0-9}

For more information on Data Structure 033 see **section 2.4.33** of the ISBT 128 Standard Technical Specification (ST-001).

Considerations for Data Structure 033:

- **nnnnn** shall specify the Facility Identification Number of the facility that assigned the Product Code [FIN(P)].
    - shall be encoded and interpreted by reference to the ICCBBA Registered Facility table published and maintained by ICCBBA in the password-protected area of the ICCBBA website.

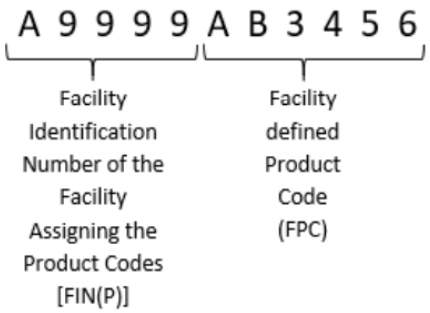
- The facility that assigned the Product Code may, or may not, be the same facility that assigned the DIN. This code, in conjunction with the DIN [Data Structure 001] and Product Code [Data Structure 003], may be required for unique identification of the product.
    - If the FIN(P) within Data Structure 033 is required to ensure unique identification of the product, then these data structures shall be presented in a 2-D symbol to ensure all information required for traceability is read. See *Implementation Guide: Use of Processing Facility Information Code [Data Structure 033]* for an explanation of when the FIN(P) is required for traceability.

- **pppppp** shall specify the Facility-defined Product Code (FPC) assigned by the processing or labeling facility, which indicates a catalog or other number that identifies the product within its system.

- The FPC shall not be used to create uniqueness for the product.

- If a value is not required, the default value of 000000 (zeroes) shall be used.

Figure 5: Example of Data Content for Data Structure 033



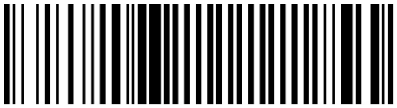
Additional References:

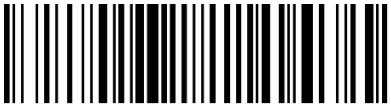
- *Implementation Guide: Use of Processing Facility Information Code [Data Structure 033]* (IG-031).

3.12.1 Valid messages – Data Structure 033:

Example 12.1 - 12.3: • Use of Alphanumeric values		
Example 12.1	**Data Identifier**	**Data Content**
	&+	W2323000000
Complete message encoded in bar code: &+W2323000000		
Example 12.2	**Data Identifier**	**Data Content**
	&+	P0002W123AB
Complete message encoded in bar code: &+P0002W123AB		
Example 12.3	**Data Identifier**	**Data Content**
	&+	Q0009123456
Complete message encoded in bar code: &+Q0009123456		

Example 12.4 - 12.6:
- Use of only numeric values

Example 12.4	Data Identifier	Data Content
	&+	20001000001
Complete message encoded in bar code: &+20001000001		

Example 12.5	Data Identifier	Data Content
	&+	90003024680
Complete message encoded in bar code: &+90003024680		

Example 12.6	Data Identifier	Data Content
	&+	40001886421
Complete message encoded in bar code: &+40001886421		

3.12.2 Non-Compliant Messages – Structural

Example 12.7:
- Incorrect data identifier

Example 12.7	Data Identifier	Data Content
	=+	A9990000000
Message encoded in bar code: =+A9990000000		
Corrected message for comparison: &+A9990000000		

Considerations:
- With the exception of Data Structure 001[25] and non-ICCBBA defined data structures,[26] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.

[25] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*
[26] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

- Begins with either "=" or "&" (ASCII character code 61 and 38 respectively).
- The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
- "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.

- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 12.8:

- Incorrect data length

Example 12.8	Data Identifier	Data Content
	&+	W4444123AB

Message encoded in bar code:
&+W4444123AB_

Corrected message for comparison:
&+W4444123ABC

Considerations:

- Data content for Data Structure 033 must be 11 characters.

Example 12.9:

- Incorrect data length

Example 12.9	Data Identifier	Data Content
	&+	W0001BBTT365

Message encoded in bar code:
&+W0001BBTT365

Corrected message for comparison:
&+W0001BBTT36

Considerations:

- Data content for Data Structure 033 must be 11 characters.

Example 12.10:

- Unallowable character encoded

Example 12.10	Data Identifier	Data Content
	&+	W0001000ab

Message encoded in bar code:
&+W0001000ab

Corrected message for comparison:
&+W0001000AB

Considerations:
- Data content for the facility-defined product code within data structure 033 must consist of 6 characters (A-Z; 0-9).

3.12.3 Non-Compliant Messages – Invalid Data

Example 12.11:
- A Facility Identification Number (FIN) that has not been assigned by ICCBBA is specified.

Example 12.11	Data Identifier	Data Content
	&+	AG500000000

Message encoded in bar code:
&+AG500000000

Corrected message for comparison:
&+A0050000000

Considerations:
- Data structure 033's data content consists of a 5-character FIN which is interpreted by reference to the ICCBBA Registered Facilities database.

3.13 Processor Product Identification Code [Data Structure 034]

Purpose: Data Structure 034, the Processor Product Identification Code (PPIC), shall identify:

- A processing or labeling facility
- A Facility-defined Product Code (FPC)
- A standardized ISBT 128 Product Description Code (PDC)

This data structure can be used for medical device identification.

Structure: =/nnnnnpppppqqqqq

Table 13: **Data Structure 034 Coding Values**

Element	Length	Type
=/	2	data identifiers
nnnnn	5	alphanumeric {A–N; P–Z; 0–9}
pppppp	6	alphanumeric {A–Z; 0–9}
qqqqq	5	alphanumeric {A–Z; 0–9}

Considerations for Data Structure 034:

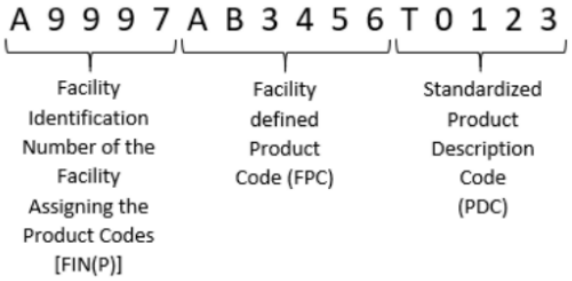
- **nnnnn** shall specify the Facility Identification Number of the facility that assigned the PDC [FIN(P)]
  - shall be encoded and interpreted by reference to the ICCBBA Registered Facility table published and maintained by ICCBBA in the password-protected area of the ICCBBA website.
  - The facility that assigned the PDC may, or may not, be the same facility that assigned the DIN.

- **ppppp** shall specify a Facility-defined Product Code (FPC) assigned by the processing or labeling facility, which indicates a catalog or other number that identifies the product within its system.
  - This code shall not be used to create uniqueness for the product.
  - If a value is not required, the default value of 000000 (zeroes) shall be used.

- **qqqqq** shall be encoded and interpreted by reference to the Product Description Code database table, with the exception of Clinical Trials PDCs which are in a separate database. The Product Description Code Database is published and maintained by ICCBBA in the password-protected area of the ICCBBA website.

- Medical devices with a human donor component shall be uniquely identified using Data Structure 034, the Donation Identification Number [Data Structure 001], and Product Divisions [Data Structure 032].

Figure 6: **Example of Data Content for Data Structure 034**



Additional References:

- *Implementation Guide: Encoding Product Information [Data Structure 003, 032, 033, and 034] – Tissues* (IG-020)

3.13.1 Valid Messages – Data Structure 034

Example 13.1 - 13.2: • Use of Tissue Product Description Code • Use of the default FPC value		
Example 13.1	**Data Identifier**	**Data Content**
	=/	W0000000000T1622
Complete message encoded in bar code: =/W0000000000T1622		
Example 13.2	**Data Identifier**	**Data Content**
	=/	A0045000000T1340
Complete message encoded in bar code: =/A0045000000T1340		
Example 13.3 - 13.4: • Use of Cellular Therapy Product Description Code • Use of the default FPC value		
Example 13.3	**Data Identifier**	**Data Content**

	=/	A9999000000S2248
Complete message encoded in bar code: =/A9999000000S2248		

Example 13.4	**Data Identifier**	**Data Content**
	=/	W4186000000S3663
Complete message encoded in bar code: =/W4186000000S3663		

Example 13.5 & 13.6

- Non-default FPC encoded

Example 13.5	**Data Identifier**	**Data Content**
	=/	A9995123456S4510
Complete message encoded in bar code: =/A9995123456S4510		

Example 13.6	Data Identifier	Data Content
	=/	11001ABC456T0475
Complete message encoded in bar code: =/11001ABC456T0475		

3.13.2 Non-Compliant Messages – Structural

Example 13.7:

- Incorrect data identifier

Example 13.7	**Data Identifier**	**Data Content**
	=+	A0005123456S4475
Message encoded in bar code: =+A0005123456S4475		
Corrected message for comparison: =/A0005123456S4475		
Considerations:		

- With the exception of Data Structure 001[27] and non-ICCBBA defined data structures,[28] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "=" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.

- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 13.8:

- Incorrect data length

Example 13.8	Data Identifier	Data Content
	=/	W0000123456S44

Message encoded in bar code:
=/W0000123456S44__

Corrected message for comparison:
=/W0000123456S4475

Considerations:

- Data content for Data Structure 034 must be 16 characters in length.

Example 13.9:

- Incorrect data length

Example 13.9	Data Identifier	Data Content
	=/	A999712345678T0553

Message encoded in bar code:
=/A9997123456**78**T0553

Corrected message for comparison:
=/A9997123456T0553

Considerations:

- Data content for Data Structure 034 must be 16 characters in length.

Example 13.10:

- Unallowable character encoded

Example 13.10	Data Identifier	Data Content

[27] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*

[28] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

	=/	A9990abcdefT0553
Message encoded in bar code: =/A9990abcdefT0553		
Corrected message for comparison: =/A9990ABCDEFT0553		
Considerations: • If alpha characters are used, they must be capitalized.		

3.13.3 Non-Compliant Messages – Invalid Data

Example 13.11:
- A FIN is used that has not been assigned by ICCBBA.

Example 13.11	Data Identifier	Data Content
	=/	LV365123456T0553
Message encoded in bar code: =/LV365123456T0553		
Corrected message for comparison: =/L0306123456T0553		
Considerations: • Data structure 034's data content consists of a 5-character FIN which is interpreted by reference to the ICCBBA Registered Facilities database.		

3.13.4 Non-Compliant Messages – Contextual Inconsistency

Example 13.12:
- A PDC is included that is not currently defined by ICCBBA.

Example 13.12	Data Identifier	Data Content
	=/	R0002356891T5555
Message encoded in bar code: =/R0002356891T5555		
Corrected message for comparison: =/R0002356891T0475		
Considerations: • An ISBT 128 PDC is a 5-character alphanumeric string from either the ICCBBA-maintained ISBT 128 Product Description Code Database or the Clinical Trials PDC Database.		

3.14 Single European Code [Data Structure 038]

Purpose: Data Structure 038 shall encode the Single European Code (SEC) as described in the EU Commission Directive 2015/565.

This data structure can be used for medical device identification.

Structure: &,4xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Table 14: Data Structure 038 Coding Values

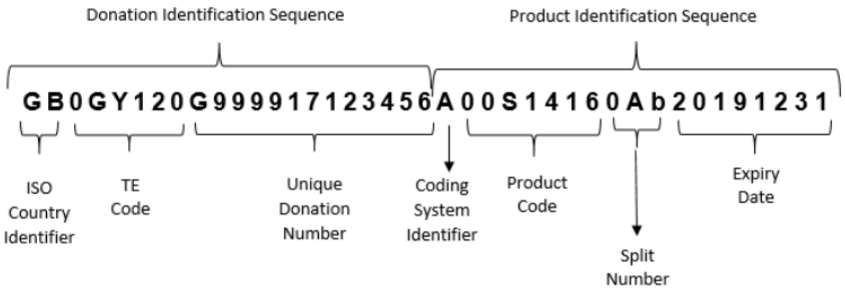
Element	Length	Type
&,4	3	data identifiers
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	40	alphanumeric {A–Z; a-z; 0–9}

For more information on Data Structure 038 see **section 2.4.38** of the ISBT 128 Standard Technical Specification (ST-001).

Considerations for Data Structure 038:

- The data content string comprises two segments: the Donation Identification Sequence and the Product Identification Sequence.

Figure 7: Example of Data Content for Data Structure 038



Additional References:

- *ISBT 128 Standard, ISBT 128 and the Single European Code (SEC)* (ST-012).

3.14.1 Valid Messages – Data Structure 038

Example 14.1:

- Use of a Tissue Product Description Code
- Product is undivided
- Includes a non-specified expiration date

Example 14.1	Data Identifier	Data Content
	&,4	SE015043S000725123546A0 0T047300000000000

Complete message encoded in bar code:
&,4SE015043S000725123546A00T047300000000000

Example 14.2:

- Use of a Tissue Product Description Code.
- Use of numerical product divisions.
- Includes a specified expiration date.

Example 14.2	Data Identifier	Data Content
	&,4	PL001274Z410125333364A00T133010020350606

Complete message encoded in bar code:
&,4PL001274Z410125333364A00T133010020350606

Example 14.3:

- Use of a Cellular Therapy Product Description Code
- Use of alpha-character product divisions
- Includes a specified expiration date

Example 14.3	Data Identifier	Data Content
	&,4	IE0TE012R000125462211A00S14160Ab20251231

Complete message encoded in bar code:
&,4IE0TE012R000125462211A00S14160Ab20251231

3.14.2 Non-Compliant Messages – Structural

Example 14.4:

- Incorrect data identifier

Example 14.4	Data Identifier	Data Content
	=,4	PT000229P000625124578A0 0T047300000000000

Message encoded in bar code:
=,4PT000229P000625124578A00T047300000000000

Corrected message for comparison:
&,4SE015043S000725123546A00T047300000000000

Considerations:

- With the exception of Data Structure 001[29] and non-ICCBBA defined data structures,[30] the following applies to ISBT 128 data identifiers:
  - Two or three characters long.
  - Begins with either "=" or "&" (ASCII character code 61 and 38 respectively).
  - The second character of an ISBT 128 data identifier is a non-alphanumeric ASCII character.
  - "&," (ASCII character code 38 and 44 respectively) can be the first two characters of a three-character data identifier but never a data identifier on its own.
- See **Table RT003** of the *ISBT 128 Standard Technical Specification* (ST-001) for an index of ISBT 128 data structures with their corresponding data identifiers.

Example 14.5:

- Incorrect data length

Example 14.5	Data Identifier	Data Content
	&,4	CY018096C481225444421A S118100020351111

Message encoded in bar code:
&,4CY018096C481225444421AS118100020351111__

Corrected message for comparison:
&,4CY018096C481225444421A00S118100020351111

Considerations:

- The Single European Code (SEC) specifies for a 40-character data string. Within that data string, a 7-character product code is specified while an ISBT 128 PDC is only 5 characters. Because of this the ISBT 128 5-character PDC shall be padded with two leading zeroes to satisfy the SEC 7-character product code requirement.

[29] *The Donation Identification Number (DIN) [Data Structure 001] is the only ISBT 128 Data Structure in which the second character of the data identifier is part of the data content; therefore, the second character of its data identifier can be: A–N, P–Z, or 1–9.*
[30] *See Section 2.5 of the* ISBT 128 Standard Technical Specification (ST-001) *for details on non-ICCBBA defined data structures.*

Example 14.6:

- Incorrect data length

Example 14.6	Data Identifier	Data Content
	&,4	NO006598J005025531733A000S42880Da20250712

Message encoded in bar code:
&,4NO006598J005025531733A000S42880Da20250712

Corrected message for comparison:
&,4NO006598J005025531733A00S42880Da20250712

Considerations:

- The Single European Code (SEC) specifies for a 40-character data string. Within that data string, a 7-character product code is specified while an ISBT 128 PDC is only 5 characters. Because of this the ISBT 128 5-character PDC shall be padded with two leading zeroes to satisfy the SEC 7-character product code requirement.

Example 14.7:

- Unallowable character encoded

Example 14.7	Data Identifier	Data Content
	&,4	NL005512N002925111124G00S153200020250909

Message encoded in bar code:
&,4NL005512N002925111124G00S153200020250909

Corrected message for comparison:
&,4NL005512N002925111124A00S153200020250909

Considerations:

- The 22nd character of the Single European Code (SEC) provides a coding system identifier that specifies the coding system that is being used to present the product code. There are three systems approved for use: ISBT 128 (Identifier = A), Eurocode (Identifier = B) and EUTC (Identifier = E).

3.14.3 Non-Compliant Messages – Invalid Data

Example 14.8:

- Invalid expiration date outlined

Example 14.8	Data Identifier	Data Content
	&,4	IE0TE016R000725240033A0 0S153200020250400

Message encoded in bar code:
&,4IE0TE016R000725240033A00S153200020250400

Corrected message for comparison:
&,4IE0TE016R000725240033A00S153200020250401

Considerations:

- The expiration date format as presented within the Single European Code (SEC) is 4-digit year, followed by 2-digit month and 2-digit day (YYYYMMDD).

Example 14.9:

- Invalid characters included within the expiration date.

Example 14.9	Data Identifier	Data Content
	&,4	ES006186E000125172261A0 0S27770MI2025Jn01

Message encoded in bar code:
&,4ES006186E000125172261A00S27770MI2025Jn01

Corrected message for comparison:
&,4ES006186E000125172261A00S27770MI2025061 01

Considerations:

- The expiration date format as presented within the Single European Code (SEC) is 4-digit year, followed by 2-digit month and 2-digit day (YYYYMMDD).

Example 14.10:

- Undefined Numeric ISO Country identifier included

Example 14.10	Data Identifier	Data Content
	&,4	22303030D001125394816A0 0S27770P020250812

Message encoded in bar code:
&,422303030D001125394816A00S27770P020250812

Corrected message for comparison:
&,4DE006885D001125394816A00S27770P020250812

Considerations:

- The ISO Country identifier is a value encoded in reference to the EU Compendia maintained on the EU Coding Platform website.

Example 14.11:

- A FIN that is not defined by ICCBBA is included within the SEC.

Example 14.11	Data Identifier	Data Content
	&,4	SE006320S555525321516A0 0S319500020250219

Message encoded in bar code:
&,4SE006320S555525321516A00S319500020250219

Corrected message for comparison:
&,4SE006320S023225321516A00S319500020250219

Considerations:

- The SEC specifies for a donation identification number within the 9th – 21st characters of the data content string and when an ISBT 128 Donation Identification Number is included as the unique donation number within the Device Identification Sequence of the SEC, this data content contains a 5-character FIN which is interpreted by reference to the ICCBBA Registered Facilities database.

Example 14.12:

- An undefined coding system identifier is included within the Single European Code (SEC).

Example 14.12	Data Identifier	Data Content
	&,4	NL004747N004125000017R0 0S200400020251221

Message encoded in bar code:
&,4NL004747N004125000017R00S200400020251221

Corrected message for comparison:
&,4NL004747N004125000017A00S200400020251221

Considerations:

- The 22nd character of the SEC specifies the coding system that is being used for the Product code. The coding system identifier to indicate an ISBT 128 Product Code is ‘A’.

Example 14.13:

- Trailing zeros have been added to satisfy the Single European Code’s (SEC’s) 7-character Product Code requirement.

Example 14.13	Data Identifier	Data Content
	&,4	HR00130121002258412 54AS2004000C020251111

Message encoded in bar code:
&,4HR00130121002258412 54AS2004000C020251111

Corrected message for comparison:
&,4HR00130121002258412 54A00S20040C020251111

Considerations:

- The SEC specifies for a 40 character data string. Within that data string, a 7-character product code is specified while an ISBT 128 PDC is only 5 characters. Because of this the ISBT 128 5-character PDC shall be padded with two leading zeroes to satisfy the SEC 7-character product code requirement.

Example 14.14:

- A trailing zero has been added to satisfy the Single European Code's (SEC's) 3-character Split Number requirement.

Example 14.14	Data Identifier	Data Content
	&,4	IE0TE016R000725161106A0 0S3766Hd020250321

Message encoded in bar code:
&,4IE0TE016R000725161106A00S3766Hd020250321

Corrected message for comparison:
&,4IE0TE016R000725161106A00S37660Hd20250321

Considerations:

- The SEC specifies for a 40-character data string. Within that data string, a 3-character split number is specified while an ISBT 128 division code for a Cellular Therapy Product Description Code (PDC) is only 2 characters. Because of this the 3-character split number within the SEC shall be met by padding the 2-character ISBT 128 division code with a leading zero.

Example 14.15:

- An undefined ISBT 128 Product Description Code (PDC) is included within the Single European Code (SEC).

Example 14.15	Data Identifier	Data Content
	&,4	SE015043S000725220004A0 0SQ44000020250615

Message encoded in bar code:
&,4SE015043S000725220004A00SQ44000020250615

Corrected message for comparison:
&,4SE015043S000725220004A00S144000020250615

Considerations:

- An ISBT 128 PDC is a 5-character alphanumeric string from the ICCBBA-maintained ISBT 128 Product Description Code Database or the Clinical Trials PDC Database which can be found on the ICCBBA website.

3.14.4 Non-Compliant Messages – Contextual Inconsistency

Example 14.16 & 14.17:

- Data provided within the Single European Code (SEC) is inconsistent with ISBT 128 Standard specifications.

Example 14.16	Data Identifier	Data Content
	&,4	GR009783M001225123456A 00S290002320250522

Message encoded in bar code:
&,4GR009783M001225123456A00S2900023 20250522

Corrected message for comparison:
&,4GR009783M001225123456A00S29000Bc20250522

Considerations:

- Although structurally compliant with Data Structure 038, ISBT 128 Cellular Therapy Product Description Codes (PDCs) utilize alpha division characters rather than numerical character product divisions.

Example 14.17	Data Identifier	Data Content
	&,4	AT680030A016225654321A0 0T17050D020401231

Message encoded in bar code:
&,4AT680030A016225654321A00T17050D020401231

Corrected message for comparison:
&,4AT680030A016225654321A00T1705004 20401231

Considerations:

- Although structurally compliant with Data Structure 038, ISBT 128 Tissue Product Description Codes (PDCs) utilize numerical division characters rather than alpha character product divisions.

Example 14.18:

- The Collection Type Code that is included within an ISBT 128 Cellular Therapy Product Description Code (PDC) is included within the Single European Code (SEC) [Data Structure 038].

Example 14.18	Data Identifier	Data Content
	&,4	PL009870Z445925451287A0 0S1628V0020250924

Message encoded in bar code:
&,4PL009870Z445925451287A00S1628V 0020250924

Corrected message for comparison:
&,4PL009870Z445925451287A00S1628 00020250924

Considerations:

- Although structurally compliant with Data Structure 038, the inclusion of the ISBT 128 Collection Type Code within the SEC does not comply with the intended coding elements.

Example 14.19:

- An ISBT 128 Product Description Code (PDC) is included within the Single European Code (SEC) [Data Structure 038] that outlines a product that would not be identified using a SEC.

Example 14.19	Data Identifier	Data Content
	&,4	IT000017I230225142536A00 E381200020250815

Message encoded in bar code:
&,4IT000017I230225142536A00E381200020250815

Corrected message for comparison:
&,4IT000017I230225142536A00S118500020250815

Considerations:

- Although structurally compliant with Data Structure 038, the inclusion of an ISBT 128 PDC from the Blood product category is outside the scope of the SEC.

3.15 Chain of Identity Identifier [Data Structure 040]

Purpose: Data Structure 040 shall specify an ISBT 128 CoI Identifier.

Structure: &/CHαppppyynnnnnn

Table 15: Data Structure 040 Coding Values

Element	Length	Type
&/	2	data identifiers
CH	2	literal “CH”
α	1	Alphanumeric {A-N; P-Z; 1-9}
pppp	4	First two characters alphanumeric {A–N; P–Z; 0–9}; second two characters numeric {0– 9}. pppp 4 Current usage is numeric for all four characters. Alpha characters may be introduced into positions 1 and 2 in the future (e.g., if α = A and pppp = BC12, the αpppp will be ABC12).
yy	2	numeric {0-9}
nnnnnn	6	Alphanumeric {A-Z; 0-9}

For more information on Data Structure 040 see **section 2.4.40** of the ISBT 128 Standard Technical Specification (ST-001).

Considerations for Data Structure 040:

- The fixed characters “CH” within the string are used to visually distinguish the CoI from the DIN.
- The five-character Facility Identification Number identifies the Issuing Organization
- The two-digit year indicator is the nominal year of issue
- The six-character alphanumeric sequence number is assigned by the Issuing Organization

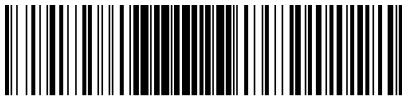
Additional References:

- *ISBT 128 Standard Chain of Identity (CoI) Identifier* (ST-028)

3.15.1 Valid Messages – Data Structure 040

Example 15.1

- Upper-case alphanumeric characters are used in the sequence number portion.

Example 15.1	Data Identifier	Data Content
	&/	CHA999923ABC999

Complete message encoded in bar code:
&/CHA999923ABC999

Example 15.2

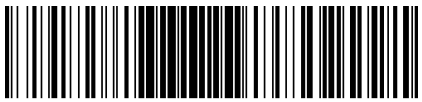
- Numeric characters are used in the sequence number portion.

Example 15.2	Data Identifier	Data Content
	&/	&/CHA999923123456

Complete message encoded in bar code:
&/CHA999923123456

Example 15.3

- Upper-case characters are used in the sequence number portion.

Example 15.3	Data Identifier	Data Content
	&/	CHA999923ABCXYZ

Complete message encoded in bar code:
&/CHA999923ABCXYZ

3.15.2 Non-Compliant Messages – Invalid Data

Example 15.4

- Lower-case alphanumeric characters are used in the sequence number portion.

Example 15.4	Data Identifier	Data Content
	&/	CHA999923abc123

Message encoded in bar code:
&/CHA999923abc123

Corrected message for comparison:
&/CHA999923ABC123

Considerations:

- A valid CoI data content string can contain upper-case alpha and numerical characters. Lower-case alpha characters are not allowed.

END OF PUBLICATION

FOR ICCBBA USE ONLY

These links are for internal document control and cannot be used externally:

ST-001 ISBT 128 Standard Technical Specification
ST-011 ISBT 128 Standard Coding and Labeling of Medical Devices using ISBT 128
ST-012 ISBT 128 and the Single European Code (SEC)
ST-017 ISBT 128 Standard Coding and Labeling of Medical Devices Containing MPHO
ST-019 ISBT 128 Standard Labeling of Reproductive Tissue and Cell Products
ST-028 ISBT 128 Standard Chain of Identity Identifier
IG-010 Use of Flags in the Donation Identification Number for Process Control of Critical Points during Processing and Distribution
IG-013 ISBT 128 Bar Codes: Valid and Invalid Examples
IG-014 Use of Data Matrix Symbols with ISBT 128
IG-020 Encoding Product Information [Data Structures 003, 032, 033, and 034] - Tissues
IG-021 Use of Product Code [Data Structure 003] - Blood
IG-023 Use of Product Divisions [Data Structure 032]
IG-024 Use of Flexible Date and Time [Data Structure 031]
IG-031 Use of the Processing Facility Information Code [Data Structure 033]
IG-033 Use of the Donation Identification Number [Data Structure 001]
IG-034 ISBT 128 Facility Identification Number

