The Australian Grocery & Liquor Industry

Industry Guidelines for the Numbering and Barcoding of Trade Items

Version 1.8

Document Change Control

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Document History/Summary of Changes

Version	Date	Revision Comments
		Updated GS1 address, contact details and 1300 national number
		Changed the Efficient Consumer Response Australasia – ECRA where relevant to The Trading Partners Forum and replaced logo
		Removed reference of consumer electronics, furniture, apparel and other industries within the general merchandise sector
		Updated GS1 service name changes
		Replaced reference to the GS1 Australia User Manual - Numbering and Bar Coding with the GS1 General Specifications
		Replaced reference to the Supply Chain Knowledge Centre with GS1 Works
		Updated the word Bar Code to Barcode as per the new terminology
		Updated hyperlink for Locatenet
		Removed reference to GS1 Australia allocates nine or seven-digit GS1 Company Prefixes
		Updated the GTIN Allocation Rules to GTIN Management Standard
		Removed reference to Extended Labelling and Go Scan
1.8	December 2018	Added GTIN non re-use statement

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These guidelines should be read in conjunction with the ***GS1 General Specification, the Supermarket Retailer Guidelines and the Trading Partner Forum Shelf Ready Packaging Guidelines***

Disclaimer

Every possible effort has been made to ensure that the information and specifications in this manual are correct; however GS1 Australia and the Trading Partner Forum (Formerly ECRA) expressly disclaim liability for any errors. In addition, no warranty or representation is made that this manual will not require modification due to developments in technology or changes or additions to the GS1 System.

Acknowledgements

This Numbering and Barcoding Guideline for the Australian Grocery & Liquor Industry was developed by GS1 Australia in conjunction with the Trading Partner Forum (Formerly Efficient Consumer Response Australasia – ECRA) Industry Guidelines Working Group which included the following organisations:

- Accolade Wines
- Brown-Forman Australia
- Coles Group
- Fine Wine Partners
- Liquor Merchants Association Australia
- Lion Pty Ltd
- Metcash Trading Ltd
- Nestle Australia Ltd
- Pernod Ricard Pacific
- Schweppes Australia Pty Ltd
- Woolworths Supermarkets

Contents

1 Executive Summary

Identifying and implementing global standards, protocols and principles for the management of data, processes and capabilities that span the value chain are critical at all points of the supply chain. This should be a key objective for all trading partners if they are to effectively meet their company needs and exceed customers' expectations. To achieve this, it is essential that all GS1 numbers and barcodes, which provide the fundamental information for trading processes within the grocery industry, meet the required standards to ensure a first scan every time.

Despite the increasing use of GS1 numbering and barcoding there are still problems associated with poor quality barcodes and related communications. This is impacting on the effective management of the replenishment and information process.

Efficient replenishment is the process of filling store shelves with the right products, right quantity, right price, right quality, right time and place and with a minimum waste of effort. The essential difference between replenishment and efficient replenishment is the avoidance of wasted effort, measured in terms of low costs and high levels of customer service.

Achieving efficiency in the management of the supply chain relies on having fast, accurate and timely information about production, distribution and consumption. The need for a highly responsive supply chain is driving forward the development of communication techniques. Barcodes and EDI are the technologies for this communication. Any company serious about exploiting the concepts and practices of supply chain management must be barcode and EDI competent. Nothing is more central to the effectiveness of a supply chain than the ability to transmit accurate, relevant, understandable and timely information among its participants.

With the development of automated scanning processes throughout the distribution chain, it is increasingly important that suppliers ensure 100% scannability of all codes, which will bring mutual benefits to all trading partners. Printing a good quality barcode which is scannable at all points through the supply chain, costs no more than printing a barcode that is unscannable.

Barcodes are used throughout the supply chain for a variety of functions. Failure to scan at any point of this chain will disrupt an efficient process, ultimately impacting on the consumer.

These recommendations for best practice encompass the main requirements of the Australian Grocery and Liquor Industry. These recommendations do not aim to encompass all aspects of GS1 numbering and barcoding, nor are they a substitute for the more detailed User Manuals available from GS1 Australia. This guideline should be read in conjunction with the Trading Partner Forum Shelf Ready Packaging Guidelines and the respective supermarket retailer guidelines for packaging and barcoding.

Clearly, it is essential to continue to discuss any problems in meeting these recommendations with trading partners. Adoption of these recommendations should bring improved business efficiency and your effectiveness for all companies within the supply chain.

2 Introduction and Overview

The GS1 System originated in the United States and was established in 1973 by the Uniform Code Council (UCC), now known as GS1 US. The UCC adopted a 12-digit identification number, and the first identification numbers and barcodes in open trade were being scanned in 1974.

Following the success of the UCC System, the European Article Numbering Association (now known as GS1), was established in 1977 to develop a compatible system for use outside North America.

Today, full global compatibility is achieved through the use of the Global Trade Item Number (GTIN), an 8, 12, 13, or 14-digit number that is unique worldwide. The GS1 System is designed for use in any industry or trade sector, at all levels of manufacturing and distribution.

The following information contains guidelines on how to number and barcode trade items using the GS1 standards for the Australian Grocery and Liquor Industry.

The versatility of the GS1 System provides users with various numbering and barcoding options. It is left to the discretion of manufacturers and suppliers to decide which option is suitable to their business needs and those of their trading partners.

2.1 Who is GS1 Australia

GS1 Australia is part of the not-for-profit GS1 global organisation and locally administers the GS1 System in Australia.

Created to help Australian business enterprises to become more efficient, GS1 Australia's fundamental role is to allocate GS1 Identification Numbers, maintaining internationally accepted trading standards. This in turn allows Australian organisations to adopt world's best practice supply chain management techniques.

Today, over 1 million member companies, serviced by offices in 108 countries, use the GS1 standards as part of their daily business communications, representing over five billion scanning transactions a day.

Today's GS1 Australia organisation was formed in 1978 as *the Australian Product Numbering Association* (APNA), which was named *EAN Australia* from 1993 to 2005.

2.2 The GS1 System

The GS1 System permits organisations of any size to order, track, trace, deliver and pay for goods across the supply chain, anywhere in the world.

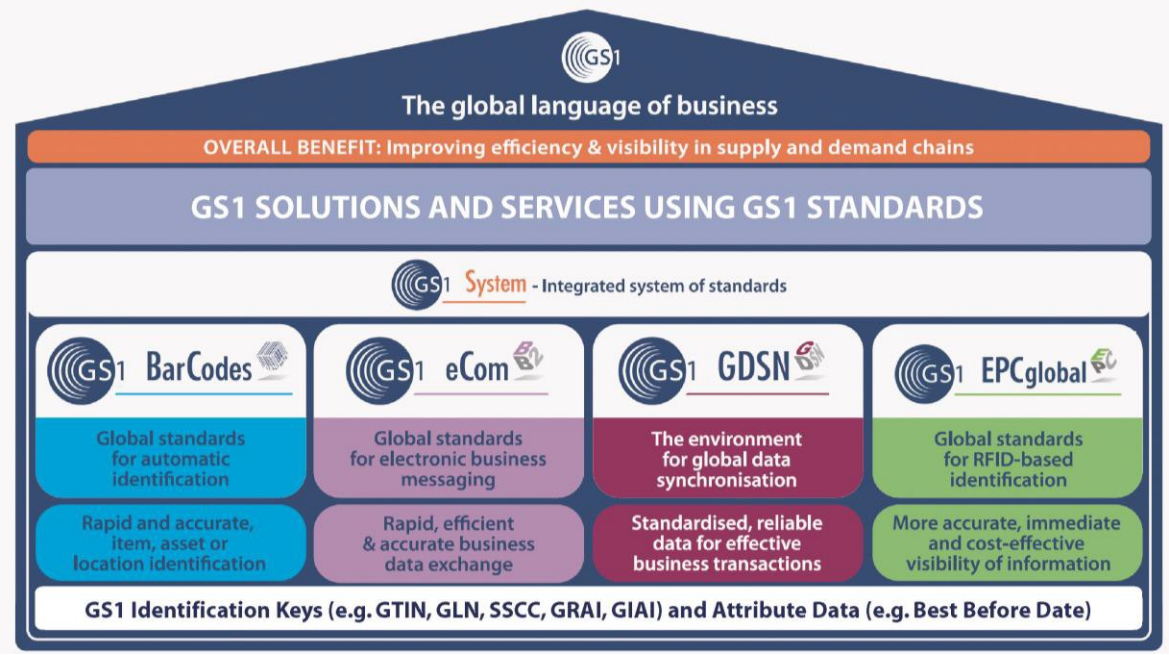
As illustrated in the Figure 1 on page 6, GS1 Solutions and Services using the GS1 System include:

GS1 Identification Keys: GS1 Identification Keys are the keys to accessing information about a product (or any physical or nonphysical item) on a computer file. The numbers are unique, non- significant and global. They can be allocated to trade items, logistic units, locations, assets, shipments, consignments, documents and service relationships. The main elements of the numbering system are GTIN, SSCC, GLN and the Attribute Data. Please contact GS1 Australia for a full list of a GS1 Identification Keys.

Barcodes: Within the GS1 System, data carriers (most commonly barcodes) are used to encode the GS1 Identification Keys to facilitate communication, data collection and exchange of information and smooth the flow of information between trading partners.

eMessaging: Is based on the principle of the transfer of structured data, using agreed messaging standards from one computer application to another by electronic means and with a minimum of human intervention. The structure and data content are exchanged by agreed means by trading partners. GS1 EANCOM and GS1 XML are the two messaging standards in the GS1 System used for eMessaging implementations. The electronic exchange of data or eMessaging provides trading partners with an efficient trading tool for the transmission of data.

Figure 1: the GS1 System



GS1 GDSN: The GS1 Global Data Synchronisation Network (GDSN) is a concept developed by various industry groups, including Global Commerce Initiative (GCI) and GS1 to assist industries streamline their supply chain transactions with the aim of reducing supply chain costs. The GS1 GDSN is an internet based interconnected network of interoperable data posted to a global registry that enables companies around the globe to exchange and synchronise supply chain master data with their trading partners. National Product Catalogue is the GDSN Data Pool run by GS1 Australia.

EPCglobal: The EPC (Electronic Product Code) Network is an open standards-based system that will make organisations more effective through real and timely visibility of information about items in the supply chain. This new, open global standard combines Radio Frequency Identification technology (RFID), existing communications network infrastructure and the EPC (a number for uniquely identifying an item) to create cost-efficient, real-time, accurate information about the location of items, the history of items, and the number of items in the supply chain.

The EPC Network is comprised of five fundamental elements:

1. Electronic Product Code (EPC)
2. EPC Tags and Readers
3. Middleware (Application Level Event Software)
4. Object Name (ONS)
5. EOC Information Service (EPCIS)

2.3 Who is the Trading Partner Forum

The Trading Partner Forum (TPF) is the meeting place for FMCG suppliers and supermarket retailers focusing on delivering end-to-end value chain efficiency. The Trading Partner Forum was previously known as Efficient Consumer Response Australasia (ECRA)

The Australian Food and Grocery Council, New Zealand Food and Grocery Council and their members along with leading supermarket retailers: Coles, Foodstuffs, Metcash, Progressive and Woolworths have established a broad-reaching platform for a strong and cohesive industry body, the Trading Partner Forum. The forum aims to deliver efficiency and improved availability across the shared end-to-end value chain, and which will ultimately provide great outcomes for the shared customer - the shopper.

The Trading Partner Forum recognise that they work in a challenging and highly competitive environment, and need a strong and cohesive body to address the issues and pursue the opportunities faced across the value chain. It is the meeting place for retailers and suppliers focusing on making this happen.

In markets the size of Australia and New Zealand it makes a lot of sense to strive to align and standardise processes on non-competitive issues, to provide for the most efficient value chain operations possible, and delivering benefits to the industry participants and to the shopper.

For further information please contact:

Trading Partner Forum
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Locked Bag 1, Kingston ACT 2604
Telephone: (02) 6273 1466
Website: www.tradingpartnerforum.org.au

3 Benefits of Implementation

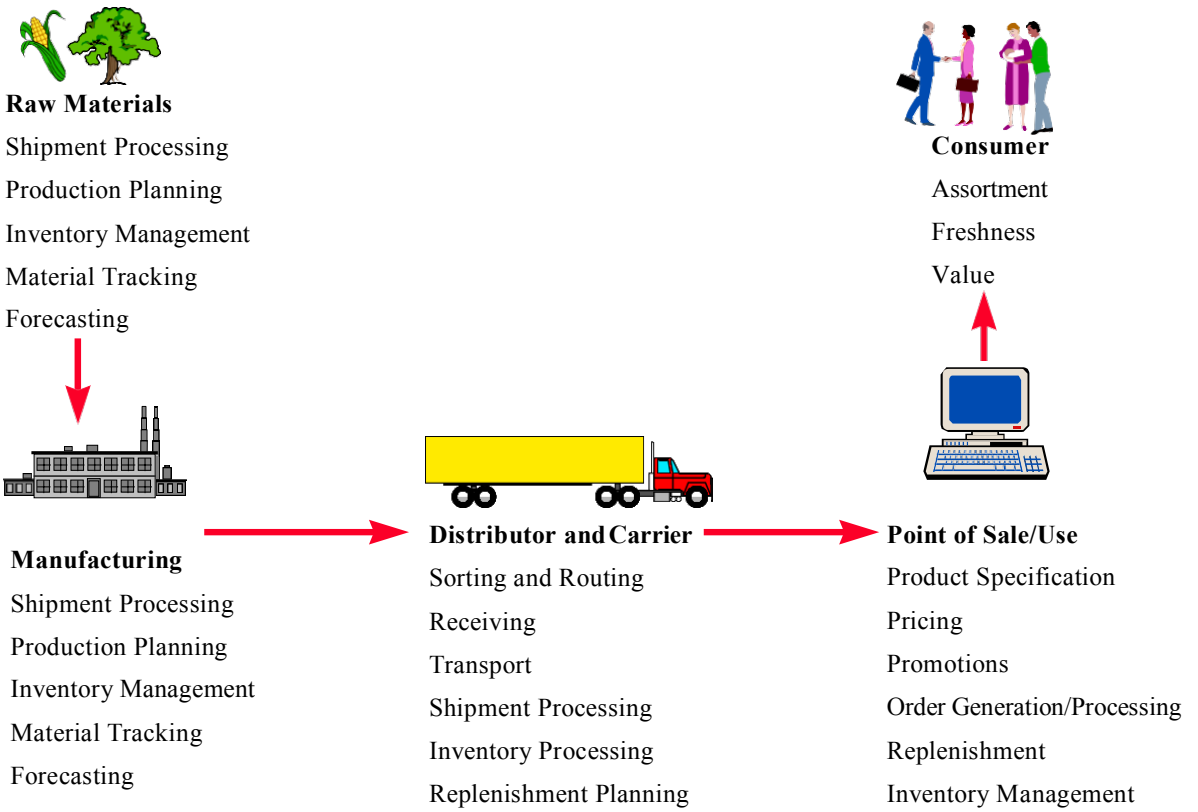
Using a standard industry approach to the numbering and barcoding of trade items, logistic units, locations, assets, and documents, amongst others, will deliver the benefits of speed, accuracy and labour savings in the handling and distribution of goods throughout the entire grocery and liquor supply chain. Companies should consider that the implementation of the GS1 standards is applicable not only to meet customer or trading partner demands but also to improve internal supply chain management. The benefits listed below are defined generically for users throughout the entire supply chain and not just the end user.

Some of the specific identified benefits are:

- More accurate information
- Real-time information
- Reduced manual entry
- Improved traceability (including for product recalls/withdrawals)
- Common identification across Industry
- Improved stock handling
- Improved stocktaking
- Reduced picking errors
- Reduce customer order errors

The numbering and barcoding of trade items supports the following supply chain functions:

Figure 2: Numbering and Barcoding Benefits along the Supply Chain



4 How to Number and Barcode Trade Items

4.1 Definition of Trade Item

A trade item is any item (product or service) upon which there is a need to retrieve pre-defined information and that may be priced or ordered or invoiced at any point in any supply chain. This definition covers raw materials through to the end user products and also includes services, all of them having pre-defined characteristics.

A trade item may be a single, non-breakable unit; it may also be a standard and stable grouping of a series of single items. Such a unit may be presented in a wide variety of physical forms: a fibreboard carton, a covered or banded pallet, a film-wrapped tray, a crate with bottles, etc. Trade items consisting of single units are identified with a unique Global Trade Item Number (GTIN); standard groupings of identical or different units are identified with separate unique GTINs.

The GTIN can be represented in one of four ways:

- GTIN-8
- GTIN-12
- GTIN-13
- GTIN-14

A separate GTIN must be assigned to every different variation of a product. Size, style, grade, colour, etc. are all considered separate variations and thus require separate GTINs.

Any change to trade items, such as weight, description, etc. **may** require the allocation of a **new** GTIN. Section 4.9.1 of this guideline refers to the GTIN Management Standards and examples, including vintage wines, for the Australian Grocery & Liquor Industry. For further examples, consult www.gs1.org and follow the links to “GTIN Management Standards” for guidance on when a change of GTIN is required, or contact GS1 Australia for further information.

When allocating GTINs in any of the formats described in the following sections, GS1 Australia recommends that no significance is created within the GTIN itself. Data is linked via a database to the GTIN, thus no level of understanding is required within the number itself.

Please note, that once a GTIN has been allocated to a trade item, and it has been introduced to the market, under no circumstances, must it be transferred or reused for any other trade item.

4.2 Attributes of Trade Items

Attribute information of trade items is any data over and above the item identifier, i.e. the GTIN. Examples of this type of information include batch numbers, serial numbers and variable measure information such as length, weight etc.

Attribute information is represented by GS1 Application Identifiers (AIs) and these ensure that the attribute information can be interpreted unambiguously by trading partners throughout the entire supply chain. The Australian Grocery and Liquor Industry support the use of attribute information in the supply chain. Individual companies need to make their own assessment on the implementation and use of attribute information in their business.

Important Notes REGARDING TRADE ITEM ATTRIBUTE INFORMATION:

- Attribute information cannot stand-alone; it must always be accompanied by a GTIN
- Attribute information can be encoded with the GTIN in a GS1-128 or GS1 DataBar* Barcode. It can also be added as an additional barcode to an existing EAN-13, UPC-A, ITF-14 or a GS1-128 Barcode, which is representing a GTIN
- If an AI appears on the same item more than once (e.g. if two labels are applied to the same item) the AI must be followed by the same information on each label
- Attribute information cannot currently be scanned at the retail Point-of-Sale

For further information regarding the use of Application Identifiers please refer to the ***GS1 General Specifications.***

Suppliers, at their discretion, can apply to trade items, any of the AIs available to them under the GS1 specifications. For a complete list of AIs refer to the ***GS1 General Specifications*** *which can be found at www.gs1au.org.*

Example:

Figure 3: Attribute Information used for individual product identification

Note: Barcode size is not to scale. The GTIN-13 is encoded in an EAN-13 Barcode, the attribute information, such as expiry date, batch/lot number or serial number is encoded in a GS1-128 Barcode. Only the EAN-13 Barcode will be scanned at POS.

* GS1 DataBar has been approved for bilateral use between trading partners from 2010 and, in 2014 GS1 DataBar becomes an open Symbology and all scanning environments must be able to read these symbols.

4.3 Difference between Numbering and Barcoding

The GS1 System makes a clear distinction between numbering and barcoding. Even though they often go together, it is very important to be clear about the difference.

4.3.1 Numbering

The GS1 System provides Identification Keys (the 'Numbers') for different applications. The application will determine how the number is to be used. The data structure of the GS1 Identification Keys guarantees worldwide uniqueness within the relevant area of application. There are nine GS1 Identification Keys that support the identification of trade items, logistic units, shipments, consignments, locations, documents, service recipients, individual assets, and returnable assets. Each of the GS1 Identification Keys provides a link between the items and information pertaining to them.

4.3.2 Barcoding

All of the GS1 Identification Keys ('numbers') used in the GS1 System can be represented in data carriers and of these; barcodes are the most commonly used. Barcodes are a means of representing data in machine readable form, and allow automatic data capture at each point where an item leaves or enters premises.

With improvements in the technology and new application requirements, data carriers such as GS1 DataBar, GS1 DataMatrix, and EPC/RFID have been introduced.
Barcodes are usually included in the production process, at the producer site. They may be pre- printed with other information present on the packaging, a label can be affixed to the item at the production line, or they can be printed directly on to the packaging online.

For more information, please refer to the
GS1 General Specifications
.

Figure 4: GTIN-13 vs. EAN-13

Note: Barcode size is not to scale.

4.4 Numbering, Barcoding and packaging levels

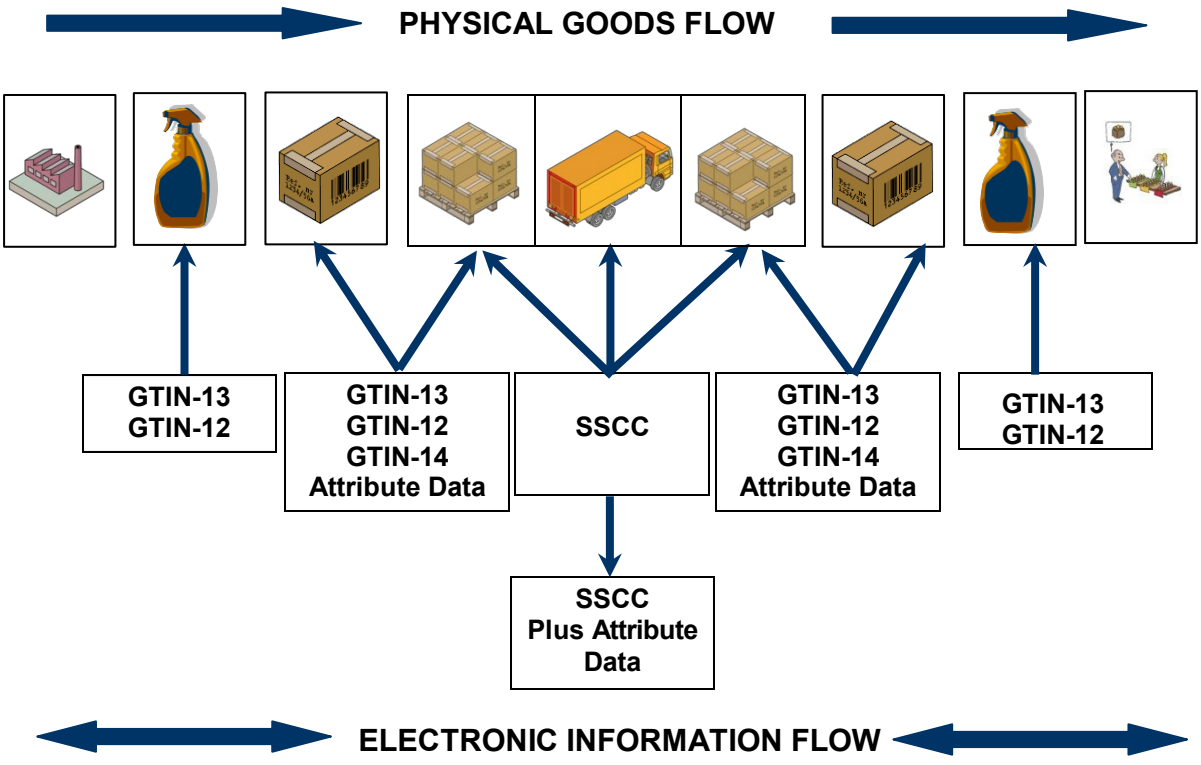
Table 1: Quick Reference Guide to choosing the numbering and barcoding options for an environment or application

Application Area	Attributes information other than GTIN required?	Encoded GTIN	Recommended Symbology to Select From
Retail Point-of-Sale only 	No	GTIN-13 GTIN-12 may be required for North America	EAN-13(or *GS1 DataBar) UPC-A (or *GS1 DataBar)
	Yes	GTIN-12 or GTIN-13 + attribute data	*GS1 DataBar
Retail Point-of-Sale only - small items 	No	GTIN-8 a zero-suppressed GTIN-12 (Note that these GTINs cannot be handled by the Australian Supermarket Retailers)	EAN-8 (or *GS1 DataBar) UPC-E (Note that these numbers are for North America only and have not been issued for some time. Australian supermarkets cannot handle UPC-E barcodes)
	Yes	GTIN-8 + attribute data	*GS1 DataBar
Retail Point-of-Sale and Non-Retail (General Distribution) 	No	GTIN-13 GTIN-12 may be required for North America/Canada	EAN-13(or *GS1 DataBar) UPC-A (or *GS1 DataBar) (Note that there are as yet only application standards for GS1 DataBar at POS)
	Yes	GTIN-12 or GTIN-13 + attribute data	*GS1 DataBar
Non-Retail (General Distribution), directly printed on carton or package corrugate 	No	GTIN-12, GTIN-13 or GTIN-14	ITF-14 (GS1-128 cannot be printed directly onto corrugate and still pass verification, this barcode would normally need to be on a printed label)
	Yes	GTIN-12, GTIN-13 or GTIN-14 + attribute data	ITF-14 plus GS1-128 (GS1-128 cannot be printed directly onto corrugate and still pass verification, this barcode would normally need to be on a printed label)

* (**GS1 DataBar** has been approved for bilateral use between trading partners from 2010 and, in 2014 GS1 DataBar becomes an open Symbology and all scanning environments must be able to read these symbols)

Non-Retail (General Distribution), can encode attribute data, ideal for printing on labels 	No	GTIN-12, GTIN-13 or GTIN-14	GS1-128
	Yes	GTIN-12, GTIN-13 or GTIN-14 + attribute data	GS1-128

Figure 5: an example illustrating Identification across the Supply Chain



4.5 Fixed Measure Trade Items Sold at Retail Point-of-Sale (POS)

Any trade item which is intended to be sold to the final consumer through retail Point-of-Sale (POS) is more commonly known as a RETAIL ITEM or CONSUMER UNIT.

Trade items, scanned at retail POS can be identified with a GTIN-13, GTIN-12 or GTIN-8 as described in the following sections. To be scanned at the Point-of-Sale, these GS1 Identification Keys must be encoded in EAN-13, EAN-8, UPC-A, UPC-E or GS1 DataBar Barcode symbology.

* GS1 DataBar has been approved for bilateral use between trading partners from 2010 and, in 2014 GS1 DataBar becomes an open Symbology and all scanning environments must be able to read these symbols.

4.5.1 GTIN-13

Trade items that are sold at POS are generally allocated a GTIN-13.

The format of the GTIN-13 is:

GS1 Company Prefix: The GS1 Company Prefix is allocated by GS1 Member Organisations.

Item Reference: A unique non-significant number for each individual trade item. Generally issued sequentially, 000, 001, 002 etc. for each different variant of a product.

Check Digit: Validates the accuracy of the entire number by mathematical formula.

A GTIN-13 can be represented in an EAN-13 or GS1 *DataBar Barcode. ***(Please refer to footnote above)**

For details regarding the EAN-13 Barcode, including dimensions, please refer to EAN-13 Barcode specifications in the ***GS1 General Specifications***

Note: Barcode size is not to scale.

Figure 6: Example of a trade item carrying a GTIN-13 represented in an EAN-13 Barcode

Note: Barcode size is not to scale

4.5.2 GTIN-8

The allocation of a GTIN-8 is restricted to trade items that genuinely cannot accommodate a larger EAN-13 Barcode. These can only be obtained directly from GS1 Australia and are allocated as a complete eight digit number. A GTIN-8 can be represented in an EAN-8 or GS1 *DataBar Barcode.
***(Please refer to footnote above)**

For details regarding the EAN-8 Barcode, including dimensions, please refer to EAN-8 Barcode specifications in the ***GS1 General Specifications***

Figure 7: Example of an EAN-8 Barcode representing the GTIN-8

Note: Barcode size is not to scale.

4.5.3 GTIN-12

If your trade item is to be sold within the United States and/or Canada, a GTIN-12 may be required. A GTIN-12 can be represented in a UPC-A or GS1 *DataBar Barcode. ***(Please refer to footnote above)**

For more information on the GTIN-12 and for details of the UPC-A Barcode, including dimensions, please refer to the ***GS1 General Specifications***.

Figure 8: Example of a UPC-A Barcode representing the GTIN-12

Note: Barcode size is not to scale.

4.6 Variable Measure Trade Items Sold at Retail Point-of-Sale (POS)

These Variable Measure Trade Items are those sold in random quantity against a fixed price per unit quantity and intended to cross a Point-of-Sale (e.g. apples sold at a fixed price per kilogram); the items are either marked in the store by the retailer or are marked at the source by the supplier.

A **global** solution for Variable Measure Trade Items sold at POS has been published. For more information go to www.gs1.org.

There is also a **national** solution for Variable Measure Trade Items sold at POS; manufacturers who wish to use this solution must apply to GS1 Australia for standard variable measure company item numbers. The latter are used to construct a 13-digit number known as a VMN-13 (Variable Measure Number). For details on VMN-13s and the EAN-13 Barcode in which they are encoded, please refer to the ***GS1 General Specifications.***

4.7 Fixed Measure Trade Items Non-Retail (General Distribution)

4.7.1 Definition

Trade items not sold at POS are either single items or any standard grouping of items made up to facilitate the operations of handling, storing, order preparation, shipments etc. and may often be referred to as **NON-RETAIL TRADE ITEMS.**

It is recognised that beyond the trade item sold at retail POS, there can be many different levels of packaging of trade items. The next level of packaging, which is not likely to be sold at retail POS, is often referred to as an **INNER OR INTERMEDIATE** pack. The last level of packaging (the outer most) is considered to be the highest level; this is up to but not including the pallet. However, this does not preclude suppliers from issuing GTINs to pallets if they wish to identify the pallet itself as a trade item.

Note: Each individual level of trade item must be uniquely identified with a different GTIN

4.7.2 Options for Trade Items NOT sold at Retail Point-of-Sale (POS)

A trade item **not** sold at retail POS can be numbered and barcoded with:

- GTIN-14 represented in either the ITF-14 or GS1-128 Barcode
- GTIN-13 represented in an EAN-13, ITF-14 or GS1-128 Barcode

For items sold in North America, refer to the *GS1 General Specifications*

4.7.3 GTIN-14

This option is only available for homogenous groupings of standard trade items, where all units contained in the group are identical. It involves using an Indicator with the GTIN and recalculating the Check Digit.

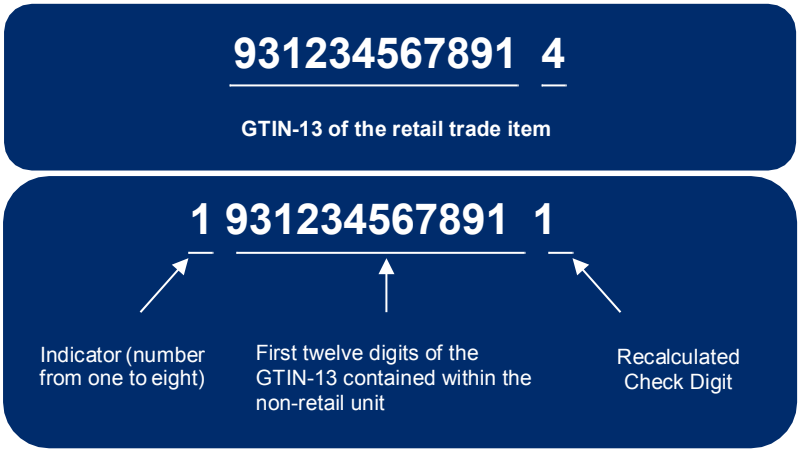
An Indicator can be any number from one to eight. Indicators are used to create up to eight unique GTIN-14s to distinguish between different packaging levels or pack quantities of the same trade item. They are chosen at the discretion of the company allocating the number.

Note: The Indicator 9 is reserved for variable measure trade items (see Section 4.5)

How to form a GTIN-14 if a Trade Item Sold at Retail Point-of-Sale (Retail Trade Item) Carries a GTIN-13

Choose the GTIN-13 on the retail unit that is the lowest level of packaging within the non-retail trade item. To form the GTIN-14, put an Indicator in front of the first twelve digits of this GTIN-13 then recalculate the Check Digit. A Check Digit Calculator Program is available on our website www.gs1au.org.

Figure 9: structure of GTIN-14 based on GTIN-13



How to form a GTIN-14 if a Retail Trade Item Carries a GTIN-8

Choose the GTIN-8 on the retail unit that is the lowest level of packaging within the non-retail trade item. To form the GTIN-14, put an Indicator followed by five filler zeros in front of the first seven digits of the GTIN-8 then recalculate the Check Digit. A Check Digit Calculator Program is available on our website www.gs1au.org

Figure 10: structure of GTIN-14 based on GTIN-8

Note: The GTIN-14 can be represented in either an ITF-14 or a GS1-128 Barcode **but the ITF-14 Symbology is better suited for printing onto corrugated fibreboard**.

Table 2: example of GTIN-14 created out of GTIN-13 or GTIN-8

Item		GTIN	Barcode
Consumer unit/retail item		931234500000 **5** 9312345 **7**	EAN-13 EAN-8
Box of 20 identical retail items		**1** 931234500000 **2** **1** **00000**9312345 **4**	GS1-128 / ITF-14
Box of 50 identical retail items		**2** 931234500000 **9** **2** **00000**9312345 **1**	GS1-128 / ITF-14

Note: Only allowed with identical products in the non-retail item.

Figure 11: ITF-14 Barcode

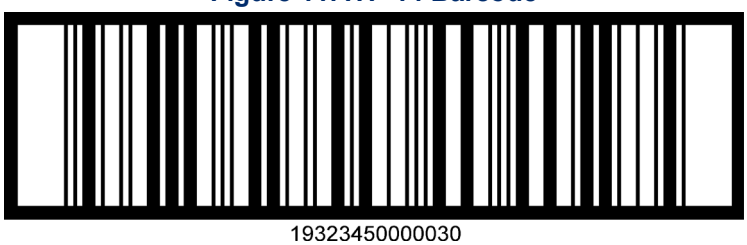
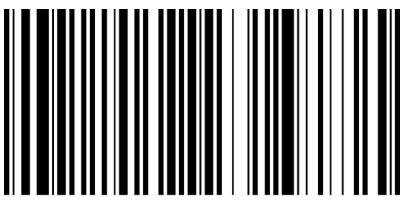


Figure 12: GS1-128 Barcode



Note: Barcode size is not to scale.

4.7.3.1 GTIN-13

If desired, a GTIN-13 can be allocated to a non-retail trade item. The method used to allocate this number is the same as for allocating a number to a retail trade item; refer to the ***GS1 Australia User Manual - Numbering and Barcoding***, located on our website - www.gs1au.org.

If there is any possibility of the non-retail trade item being sold at retail level, it *must* carry a GTIN-13 represented in an EAN-13 Barcode. Ensure that a non-retail trade item is not allocated the same GTIN as a retail trade item.

If the non-retail trade item is NOT crossing Retail Point-of-Sale, it can be encoded in an ITF-14 or GS1-128 Barcode, provided that a filler zero is added in front of the GTIN-13.

The ITF-14 Symbology is better suited for printing onto corrugated fibreboard.

Figure 13: EAN-13 Barcode

Figure 14: ITF-14 Barcode

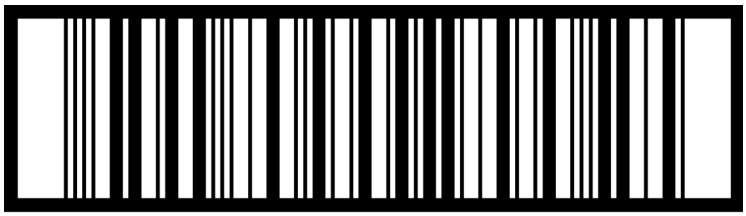
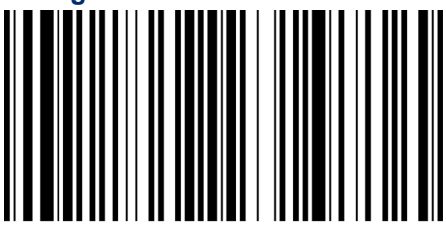


Figure 15: GS1-128 Barcode



Note: Barcode size is not to scale.

4.8 Variable Measure Trade Items NOT Sold at Retail Point-of-Sale (POS)

Trade items may be of variable measure either because the production process does not guarantee consistency in weight, size or length (cartons or crates of meat, bulk smallgoods for in store delis) or because the items are created to meet a special order which states a quantity.

Only trade items that are sold, ordered or produced in quantities, which can vary continuously, are covered by the rules outlined below. Trade items, which are sold in discrete and pre-defined units (e.g. as a nominal weight), are treated as fixed measure trade items.

A trade item must be considered to be variable measure if one of its parameters is variable and the variation is of significance to trading partner(s). For example, a supplier may sell and invoice cuts or pieces of meat sold in cartons with a variable weight. The customer, a retailer in this example, may need to know the exact weight contained in each carton. In this example, the supplier should mark the trade item by using a variable measure GTIN and a variable measure Application Identifier (AI).

The GTIN-14 formed with the Indicator **"9"** is used to identify a Variable Measure Trade Item not crossing POS. The presence of variable measure information is mandatory for the complete

identification of a particular Variable Measure Trade Item not crossing POS. The digit **"9"** in the first position is an integral part of the fourteen digit Variable Measure GTIN.

Note: Variable measure information represented in the following manner **cannot** be scanned at the retail Point-of-Sale (POS).

The format of one example of a variable measure GTIN-14 is:

Application Identifier (01)	Used to identify that the data following is a fourteen-digit GTIN when encoded in a GS1-128 Barcode
Indicator "9"	Indicates that the trade item is of variable measure
GS1 Company Prefix:	The GS1 Company Prefix is allocated by GS1 Member Organisations.
Item Reference:	Item Reference allocated by the company to each different item.
Check Digit:	Calculated using a mathematical formula
Application Identifier (310n)†	Used in a GS1-128 Barcode to identify that the information following is the net weight in kilograms. The last digit of the AI, n, indicates the decimal point position.
Format (of the AI)	Six fixed numeric characters

Figure 16: GS1-128 Symbol representing a Variable Measure Trade Item with a weight of 3.25 kg

Note: Barcode size is not to scale.

Note: For further information on Application Identifiers see Section 4.2 and consult the ***GS1 General Specifications.***

4.9 Location of the Barcode on Trade Items

Productivity and scanning accuracy improve considerably when the barcode location is predictable. Consistency in the location of the barcode achieves maximum productivity in any scanning environment.

† The Application Identifier (310n) has been used as an example. Any of the measure AIs available can be used.

4.9.1 Trade Items Sold at Retail Point-of-Sale (POS)

Where the trade item sold at retail POS is to be barcoded, the **general** location for barcodes on trade items is the lower right quadrant of the back respecting the Quiet Zones around the barcode and the edge rule.

The **edge rule** stipulates that the barcode must not be closer than 8mm or further than 100mm from any edge of the package/container.

In the event that trade items are of an irregular or unusual shape, a common sense approach should be taken; the barcode should be located as close as possible to the recommended guidelines thereby ensuring that its location does not affect its ability to be scanned.

More detailed guidelines for specific types of retail trade items can be found in ***GS1 General Specifications***

4.9.2 Trade Items NOT Sold at Retail Point-of-Sale (POS)

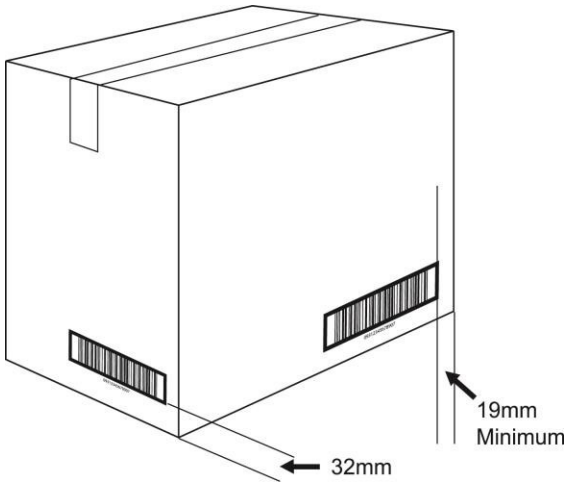
The barcodes on units not intended for retail POS should be upright (i.e. in picket fence orientation) and placed on the sides of the unit. Each item shall have at least one barcode, with two or more highly recommended. The barcodes should be kept away from any vertical edges so that they are less likely to be accidentally damaged in transit.

ALL ATTEMPTS SHOULD BE MADE TO MAINTAIN 100% SCANNABILITY AT ALL TIMES.

The barcodes can be positioned anywhere along the face of the carton ensuring that the following GS1 recommendations are followed:

- The lower edge of the vertical bars (not the bottom of the surrounding horizontal bearer bar of an ITF-14 Barcode) are exactly 32mm from the lower edge of the base of the carton
- No part of the barcode (including the Bearer Bars on an ITF-14 Barcode, and Quiet Zones is closer than 19mm to any vertical edge

Figure 17: Location of an ITF-14 Barcode on a Trade Item

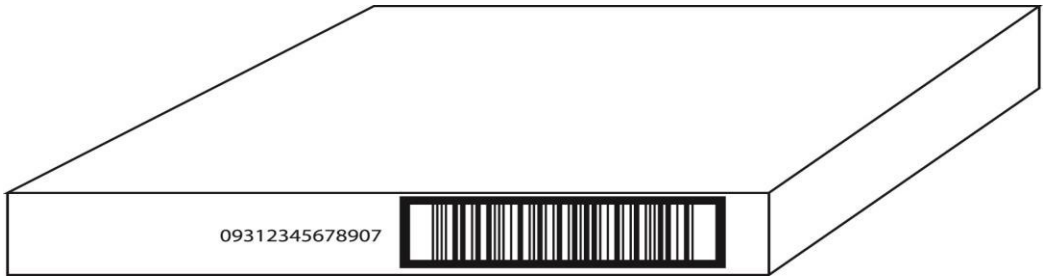


4.9.2.1 Shallow Trays

If the height of the non-retail unit is less than 50mm, making it impossible to print a full height barcode with the Human Readable Interpretation below the bars, or if the construction of the unit is such that the full height barcode cannot be accommodated, the following options should be considered (in order of preference):

- Place the Human Readable Interpretation to the left of the barcode, outside the Quiet Zones as shown in Figure 18
- When the height of the unit is less than 32 mm, the barcode may be placed on the top of the package, with the bars perpendicular to the shortest side, no closer than 19mm from any edge

Figure 18: Symbol Placement on Shallow Trays



5 How to Number and Barcode Logistic Units

5.1 Serial Shipping Container Code (SSCC)

A logistic unit is an item of any composition established for transport and/or storage, which needs to be managed through the supply chain.

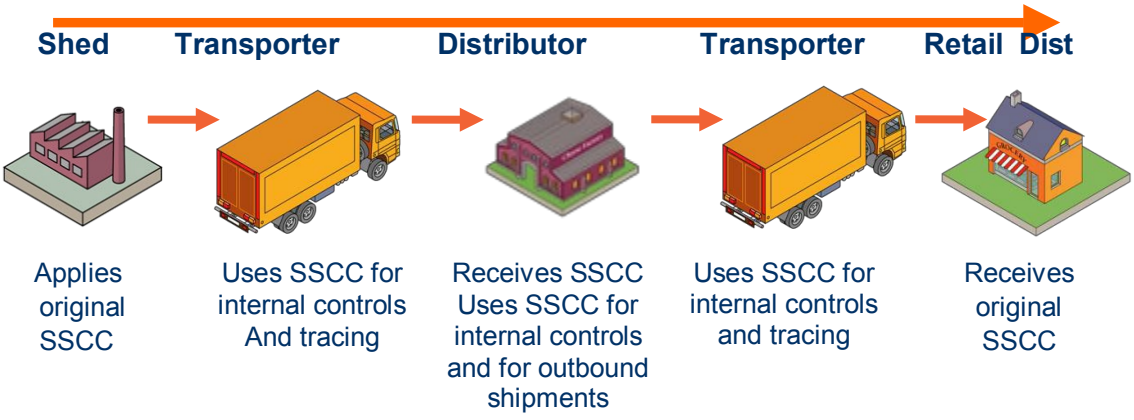
The Serial Shipping Container Code (SSCC) is a reference number or license plate used to uniquely identify logistics units. The SSCC acts as a "reference key" which can be stored in a computer system to which information can be added and shared amongst trading partners as the logistics unit moves throughout the supply chain. This unique "license plate" provides the opportunity to track and trace logistic units in the supply chain.

Scanning the SSCC marked on each logistic unit allows the physical movement of units to be individually tracked and traced by providing an information flow. It also opens up the opportunity to implement a wide range of applications such as cross docking, shipment routing, automated receiving etc.

The SSCC is used to uniquely identify goods on the way from sender to final recipient, and can be used by all participants in the transport and distribution chain. Each shipping container or logistic unit, at the time of its creation, is uniquely identified by the sender with an SSCC. A label encoding the SSCC is applied to the logistic unit using the appropriate AI and the GS1-128 Barcode.

The SSCC uniquely identifies the entity (typically the shipping container or logistic unit to which the SSCC is applied) for the lifetime of that unit.

Figure 19: The Use of the SSCC throughout the supply chain



It is essential that the recipient, transport company, distributor or customer of the transport unit with the SSCC attached, receives prior advice about the details of the transport unit and the SSCC. This advice is usually communicated via eMessaging, which is the computer-to-computer exchange of business messages in a standard format.

There may be instances where all parties relevant to a particular shipment are not fully capable of eMessaging and where only some electronic messages are being exchanged. In this situation there may be a requirement to add additional information to the logistics label to facilitate the process of the logistic units through the supply chain. Alternatively the whole supply chain may be fully capable of eMessaging and the whole suites of shipping messages are being exchanged.

5.2 How to Allocate the Serial Shipping Container Code (SSCC)

The SSCC should be handled as an *eighteen digit non-significant number* uniquely identifying the unit to which it is attached. To ensure worldwide uniqueness, the following general code structure has been defined by GS1 Global Office:

The brand owner or physical builder of the logistic unit is responsible for allocating the SSCC.

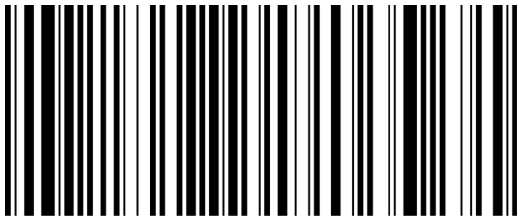
The format of the Serial Shipping Container Code is:

Figure 20: structure of the SSCC

Table 3: structure of the SSCC

Application Identifier (00)	Used in the GS1-128 Barcode to identify that the data following is an eighteen-digit Serial Shipping Container Code (SSCC)
Extension Digit	A digit (0-9) used to increase the capacity of the Serial Reference within the SSCC. The company that constructs the SSCC assigns the Extension Digit to the logistic unit.
GS1 Company Prefix:	The GS1 Company Prefix is allocated by GS1 Member Organisations. It makes the SSCC unique worldwide but does not identify the country of origin of the unit.
Serial Reference:	A Serial Reference usually comprises seven digits (nine digits if the GS1 Company Prefix is seven digits) and uniquely identifies each transport package or logistic unit. The method used to allocate a Serial Reference is at the discretion of the company coding the package.
Check Digit:	Calculated using a mathematical formula.

Figure 21: Serial Shipping Container Code (SSCC)



Note: Barcode size is not to scale.

5.3 The Logistics Label

The various trading partners involved in a distribution channel have different information needs. The information flow, which accompanies the physical flow of goods, is communicated between trading partners by various means. Electronic Commerce, or eMessaging, is the way to transmit information along the supply chain.

In practice, however, fully automated communication channels, which make it possible to rely exclusively on electronic files for retrieving information on the movements of goods, are not always available.

For this reason, there is a need to indicate relevant information on the goods themselves, in addition to their identification. The various fields of information need to be organised in a standard way in order to facilitate their interpretation and processing by all trading partners in the supply chain.

The purpose of the GS1 Logistics Label is to provide information about the unit to which it is fixed, clearly and concisely. The core information on the label should be represented both in machine (barcode) and human readable form. There may be other information, which is represented in human readable form only.

This GS1 Logistics Label can be applied to a single item, or a grouping of several items made up to facilitate the operation of handling, storing and shipping. This can be:

- A carton
- A pallet
- A group of shrink wrapped units
- A tray
- A container
- Or any other similar type of packaging created for the purpose of handling, storing or shipping.

The following information is a reference for the design of logistics labels. Application Identifiers (AIs) and the GS1-128 Symbology are important components of logistics labels and apply to all of the specifications relating to these labels.

The structure and layout for logistics labels is explained, however, emphasis is given to the basic requirements for practical application in an open trade environment. The major areas include:

- the unambiguous identification of logistic units
- the efficient presentation of text and machine readable data (barcodes)
- the information requirements of key partners in the supply chain– suppliers, customers and carriers
- technical parameters to ensure systematic and stable interpretation of the labels

This information is applicable to any type of logistic unit marked with a Serial Shipping Container Code (SSCC), which is used in logistic and transport applications where there is a need to track and trace individual units or a grouping of units being a part of the same transport transaction.

5.3.1 Components of the GS1 Logistics Label

Information represented on GS1 Logistics Labels has two basic forms:

- Information required to be utilised by people–usually comprising text and graphics, e.g. to and from addresses
- Barcodes (machine readable form) – a secure and efficient method of conveying structured data

The human readable text allows general access to basic information at any point in the supply chain. However, both methods of information representation provide value to the GS1 Logistics Label and often co-exist on the same label.

The mandatory field for all logistics labels is the Serial Shipping Container Code (SSCC) represented by the Application Identifier (00). The SSCC is a unique identification number assigned to each specific logistic unit. In principle the SSCC is sufficient for all logistic applications.

In an environment where eMessaging is used to transmit the detailed information pertaining to each logistic unit, or where the information is already within a database, the SSCC acts as the reference point to information.

However, when eMessaging is not available at each point in the supply chain, or when redundancy is desired, certain additional elements of information are desirable. Each of these is also represented through the use of Application Identifiers (AIs).

5.3.2 Label Design

The design of the logistics label accounts for the supply chain process by grouping information into three logical sections. A section is a logical grouping of information that is generally known at a particular time.

- **Supplier section:**
  This section of the label contains information that is generally known at the time of packaging by the supplier. The SSCC is applied here as the unit identifier, along with the GTIN if used. Other information that may be of interest to the supplier but might also be useful for customers and carriers can be applied. This includes product-related information such as product variant; dates such as production, packaging, expiration, and best-before dates; and batch/lot and serial numbers.

- **Customer section**
  The customer section of the label contains information that is generally known at the time of the order and order processing by the supplier. Typical information includes the ship to location, purchase order number, and customer-specific routing and handling information.

- **Carrier section**
  The carrier section of the label contains information that is generally known at the time of shipment and is typically related to transport. Typical information includes AI (420) - Ship-to Postal Codes, AI (401) - Global Identification Number for Consignment.

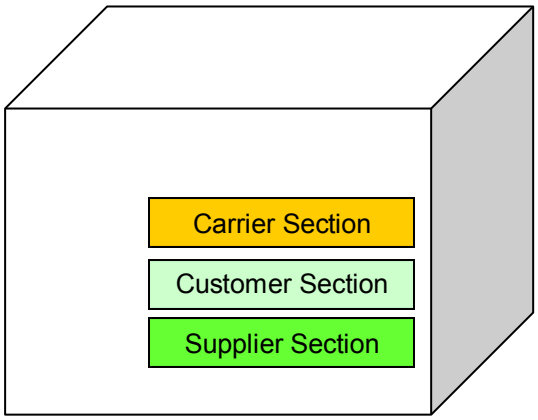
Each label section may be applied at a different point in time, as the relevant information becomes known. However should all relevant information be known at the time, the label is to be produced, it can be combined into one label, please refer to examples in Section 5.4.

Within each section barcoded information is separated from text information to facilitate separate processing by automatic data capture and people. Barcodes are represented in the lower part of each section, while human readable information is shown in the upper part of the section. This facilitates access to each component as required.

The organisation responsible for the printing and application of the label, determines the content format and dimensions of the label.

Further information regarding the type of data included in these sections can be obtained from the ***GS1 General Specifications***...

Figure 22: Label sections represented separately on a logistic unit



5.3.3 Label Dimensions

The physical dimensions of the label are determined by the company applying the label to the logistic unit. However, the size of the label should be consistent with the information required in all sections of the label.

The business requirements for most users of GS1 Logistic Labels are met by using one of the following:

- A6 format (105mm x 148mm) which is particularly suitable when only the SSCC, or the SSCC and limited additional data is encoded.
- A5 (148 mm x 210 mm)

5.3.4 Technical Specifications

The following sections identify specific aspects of the format of the logistics label to assist in the initial processes of development. Not all technical aspects have been provided within this document and companies should ensure that they consult the ***GS1 General Specifications*** or contact GS1 Australia for further information.

5.3.4.1 Barcodes

The GS1-128 Barcode shall be used for all information on the GS1 Logistics Label.

The number of GS1-128 Barcodes may be minimised by using concatenation (stringing data elements together) wherever possible. When not possible due to constraint of label size, data can be represented in multiple barcodes. The sequence of the barcoded data elements is irrelevant in terms of interpretation.

Note: The exception is the SSCC, which is the identifier for the logistic unit and the most fundamental element of the label. Due to the larger magnification recommended for the SSCC, concatenation is not feasible on a standard width label.

5.3.4.2 Barcode Orientation and Placement

Barcodes shall be in picket fence orientation on logistic units, i.e. the bars and spaces shall be perpendicular to the base on which the logistic unit stands. In all cases, the SSCC shall be placed in the lowest portion of the label.

5.3.4.3 Text

There are three types of text information, which can appear on a logistics label:

- Plain text - text that is not encoded in the barcode but often required on a label e.g. name and address of the sender and receiver
- Human Readable Interpretation - the information encoded in the barcode that is required to support manual operations and to facilitate key entry.

- Data titles - the standard abbreviated descriptions of data fields used to denote the Human Readable Interpretation of data fields e.g. SERIAL is the data title of serial number.

Further details can be found in the **GS1 General Specifications.**

5.4 GS1 Logistics Label Format for the Australian Grocery and Liquor Industry

As described in Section 5.1 there is the ability to identify logistic units with the use of the Serial Shipping Container Code (SSCC). Where companies and/or industry sectors are not fully capable of eMessaging there is often a need to identify additional data represented on the GS1 Logistics Label to assist processing of shipments through the supply chain.

The following section describes the minimum data set required on a GS1 Logistics Label for the Australian Grocery and Liquor Industry for use on logistic units of the following configuration:

Logistic unit containing the same trade items (see Figure 23)

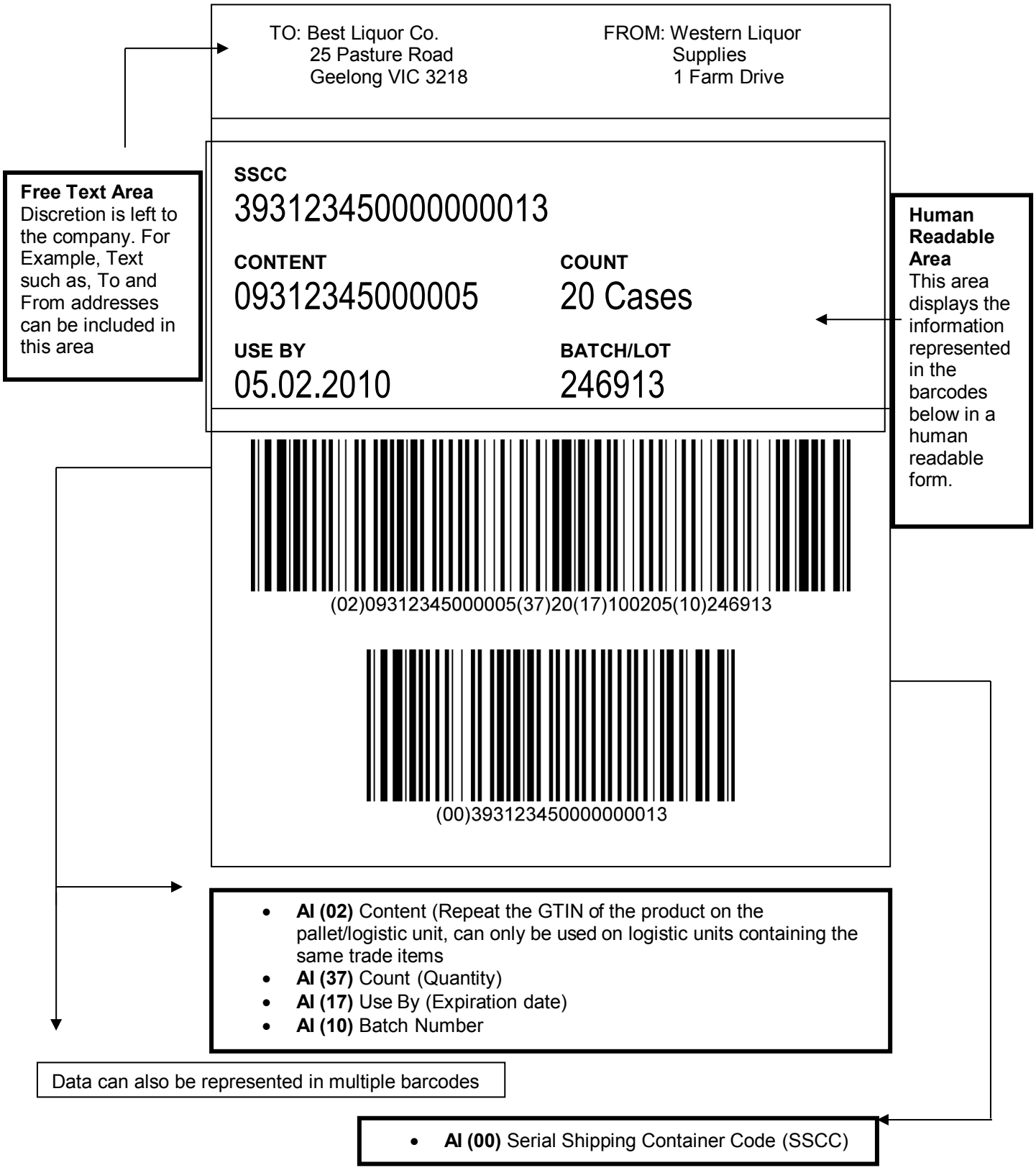
This label format would be used in the instance where the trade items carry the same GTINs within the logistic unit. Data on this label is only applicable where the GTINs are all the same on the individual trade items, for example a pallet of 20 cartons of plastic cups.

For further information on logistic unit labelling for the Australian Grocery and Liquor Industry, an ECRA toolkit has been developed and can be downloaded at
http://www.gs1au.org/industry/logistics_labelling.asp

For additional examples of logistic label formats for the Australian Grocery and Liquor Industry, please refer to the retailer's respective packaging and barcoding documentation on their websites.

Note: **Information contained on the GS1 Logistics Label is negotiable between suppliers, customers and transporters/consolidators. These guidelines in no way limit any other information, which may be required by each party in the supply chain.**

Figure 23: Example of the GS1 Logistics Label Format standard



Note: The barcodes in Figure 23 are not to scale.

5.5 Location of Logistic Unit Label

The barcodes on units intended for General Distribution should be upright (i.e. in picket fence orientation) and placed on the sides of the unit. Each item shall have at least one barcode, and two are recommended. For pallets one label is required on each fork entry side.

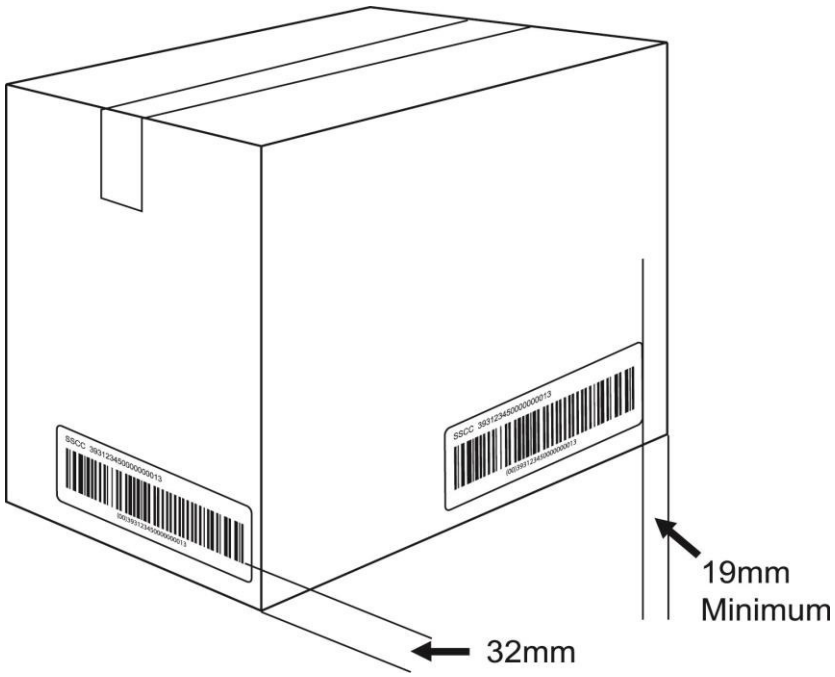
In the event that the product is not a standard carton or pallet of uniform shape all efforts should be made to meet the recommendations. For shipments with an irregular or unconventional shape common sense should direct the location of any logistics labels to ensure that the label is visible at all times.

Consult the ***GS1 General Specifications*** or contact GS1 Australia for further information on logistic label location.

5.5.1 Cartons and Outer Cases

For cartons and outer cases, logistic labels should be placed so that the lowest edge of the vertical bars of the GS1-128 Barcode containing the SSCC is 32mm from the base of the unit. Ensure that no part of the barcode (Including Quiet Zones) is closer than 19mm from any vertical edge.

Figure 24: Location of the GS1 Logistics Label on a carton or unit



If the unit is already marked with an EAN-13, UPC-A, ITF-14 or GS1-128 Barcode for trade item identification purposes, the label should be placed so as not to obscure the pre-existing barcode. The preferred location of the label in this case is to the side of the pre-existing barcode, so that a consistent horizontal location is maintained.

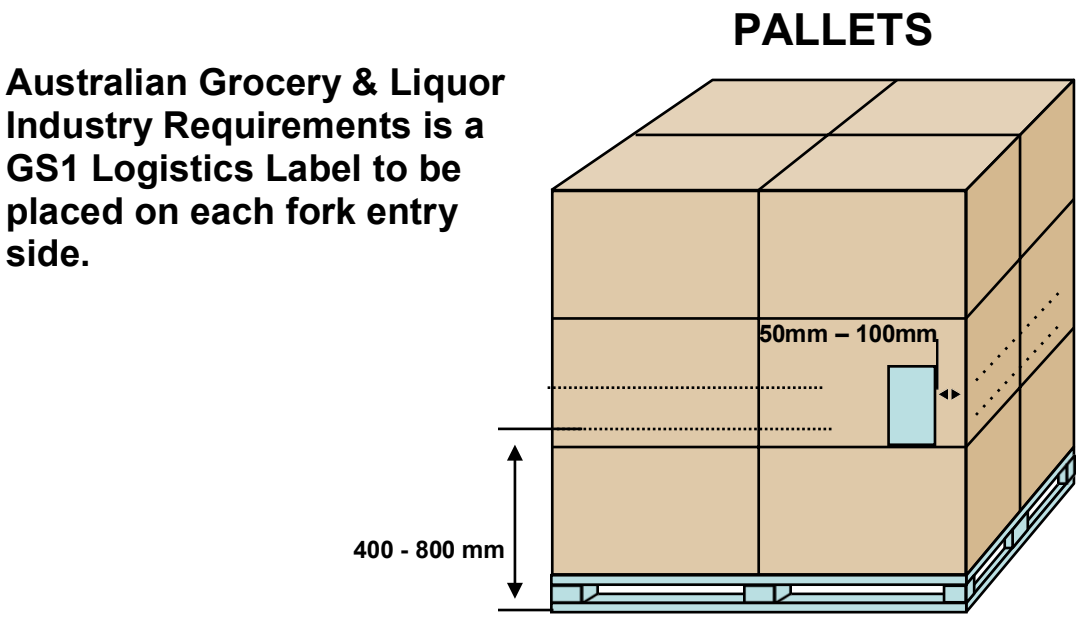
5.5.2 Pallets

For all types of pallets, including full pallets containing individual trade items and singular trade items (such as an IBC), barcodes should be placed at a height between 400mm and 800mm from the base

of the unit. Including Quiet Zones, the barcodes should be no closer than 50mm from any vertical edge to avoid possible damage.

For pallets less than 400mm in height, the barcodes should be placed as high as possible whilst protecting the logistics label.

Figure 25: Location of the GS1 Logistics Label on pallets



6 Industry Scenarios

6.1 Introduction

The GS1 System prides itself on having a complete set of recommendations and requirements to ensure that all parties throughout the supply chain are aided and not hindered by the implementation of its system.

The Australian Grocery and Liquor Industry guidelines have been written to provide a snapshot view of the GS1 System. Used in conjunction with the technical literature supplied by GS1 and assistance from GS1 they have been designed to identify the key components of the system and enable suppliers within the industry to begin implementation throughout their business.

The following section of the Australian Grocery and Liquor Industry guidelines focuses on providing examples of trade and retail items that exist within the Industry and the methods of allocating Global Trade Item Numbers (GTINs).

This is key foundation to implementation of other aspects of the GS1 System and the content covered in this chapter assumes some prior knowledge of GTINs and barcoding. Therefore, it is important readers of this section of the document refer to earlier chapters for reference material.

It is not feasible to include every possible variation of trade item available in such a document. It is up to suppliers to identify their own products and the associated method by which to allocate a GTIN and the respective barcode applicable.

Input into this section of the Australian Liquor Industry Guidelines has been provided by the ECRA Industry Guidelines Working Group.

6.2 GTIN Allocation Rules

6.2.1 When to Change a GTIN

A separate, unique GTIN is required whenever any of the pre-defined characteristics of an item are different in any way that is relevant to the trading process.

As a guiding principle, if the customer is expected to distinguish a new trade item from an old trade item and purchase accordingly, a new GTIN should be assigned to the new GTIN. This will ensure the product package and shelf edge label declarations should appear the same to the consumer. However, any law or regulation that contradicts these rules shall supersede these rules.

Specific rules that apply to prevalent industry practices have been endorsed by the Consumer Goods Forum for the Fast moving Consumer Goods (FMCG) industry. These rules covering many common business cases can be found at: http://www.gs1.org/1/gtinrules/

While all GS1 standards are voluntary, the rules are intended to drive normative practice within the FMCG sector.

6.2.2 Re-use of GTINs

In general a GTIN allocated to a trade item that has become obsolete must not be re-used for another trade item period of at least ***48 months*** have elapsed after:

- The expiration date of the last original trade item produced with that number, *or*
- The last original trade items produced with that number have been supplied to the customer.

As for re-issue of numbers, consideration should always be given for the product type and its possible life in the market place. It was determined that within the liquor industry brand owners should endeavour to ***never re-use numbers***. If it is determined that it is necessary to reallocate numbers then a minimum of ***twenty years*** should be observed for all items with the exception of commodity products where a minimum of ten years is recommended.

For grocery products the preference is not to reuse GTINs for a minimum period of ***seven years*** which is the time period that retailers are required to keep records.

6.2.3 Vintage Wines

In the liquor industry the issue of when to change a GTIN in relation to vintage wines has often been a contentious one. An assigned GTIN must never be changed as long as the item is not modified so that it needs to be discriminated from the initial trade item for ordering, stocking or billing. The example of wine clearly highlights the grey area within this definition.

For exactly the same "brand" of wine the price of top quality vintage varies enormously by year. For other "brands" of wine the year is of no consequence. Therefore it is ultimately for the brand owner (whoever markets the wine) to decide GTIN allocation rules.

If the year of production will have an impact on price point at any point in the supply chain, a unique Global Trade Item Number (GTIN) is required for every year of production.

The brand owner is ultimately responsible for the correct GTIN assignment to their trade items. The GTIN assignment impacts how their trade items are traded. Failure to use the brand owner's identification scheme means that all benefit of source numbering is lost.

6.2.4 Wine Blends, Generic Name & Traditional Expressions

If a wine blend changes and is considered major, a new Global Trade Item Number (GTIN) should be allocated. If necessary for tracking and tracing purposes a new GTIN should be allocated. Whenever any of the pre-defined characteristics of an item are different in any way that is relevant to the trading process, a new GTIN should be allocated.

There are some generic wine-style names that are protected under an international wine agreement or have conditions of use prescribed under the Wine Australia Corporation Act. A number of specific names and traditional expressions cannot be used because they are listed in the Register of Protected Names as Geographical Indications or traditional expressions.

Most restrictions relate to Australia's Wine Agreement with the EU, signed in 2008, which seeks to protect the Geographical Indications and traditional expressions of both parties. Negotiations under this agreement are continuing and some names that are destined to be protected (eg. Port) may become protected at relatively short notice.

Australian retailers have agreed that should a name change be required under this Act, the GTIN can remain the same. For further information visit
http://www.wineaustralia.com/australia/Default.aspx?tabid=251

6.3 GTIN Options for the Australian Grocery and Liquor Industry Trade Items

In Section 4 the methods for allocating and representing GTINs is described in detail and should be referred to when reviewing the following scenarios.

Regardless of the manner in which the trade item is sold, each variation must be assigned its own unique GTIN. For example if a product is sold in packs of 6 and 12, the GTIN assigned to the pack of 6 must be different to that assigned to the pack of 12. If these trade items are then packed into cartons of 24 and 36 respectively, the carton of 24 and the carton of 36 would also be assigned a separate GTIN.

The decision of which GTIN structure and what barcode to use is generally left to the discretion of each individual company. The choices made are ultimately governed by factors such as requirements within the company for the marking of additional information, the path of the trade item through the supply chain and whether the trade item will be sold in a retail Point-of-Sale environment.

6.3.1 Six Pack Cartons of Wines and Spirits

Three Key Australian Retailers require GTIN-13s on all 6 packs of wine and spirits, as they are being sold at POS

“Will the trade item ultimately be sold at the retail Point-of-Sale?” If YES then the data carrier choice must be the EAN/UPC Barcode Symbology.

Please note that unless products are to be sold in the North American and Canadian markets companies will generally not use the UPC-A Symbols.

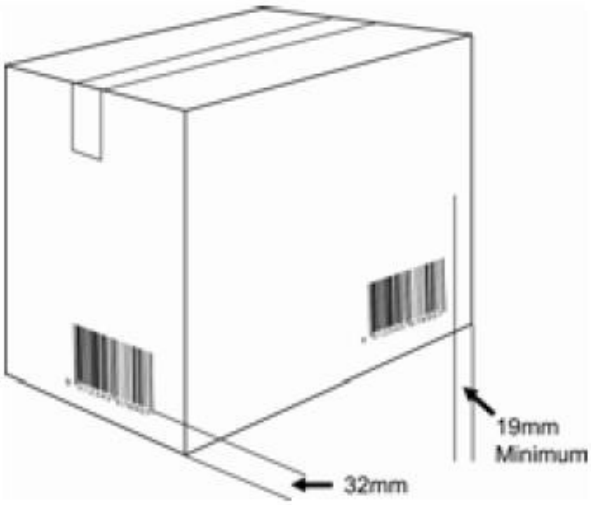
UPC-A and UPC-E, Code 128 or GS1 DataBar™ Data Carriers will not scan at retailers DC’s

Any trade item that could be sold at POS as well as scanned in a general distribution scanning environment (such as a case of 24 beer cans) must be numbered according to the rules applicable to trade items sold at POS.

The size and placement of the barcodes on these trade items are determined by the rules applicable to trade items not sold at POS.

Figure 26: Example of an EAN-13 Barcode Symbol representing the GTIN-13

Figure 27: Illustration of placement on carton



6.3.2 Legislated mandatory labelling requirements for Retail Packaging

For your convenience, information relating **to Mandatory Statements** for Liquor can be found on the **Wine Australia** Website at http://www.wineaustralia.com/Australia/Default.aspx?tabid=256

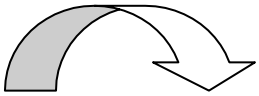
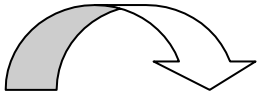
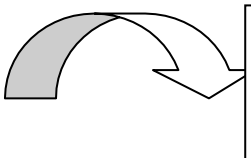
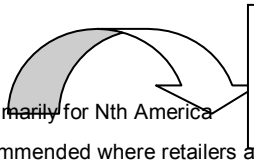
6.4 Trade Items Sold at Retail Point of Sale (POS)

Trade items that are sold to a retailer for sale in the Point-of-Sale environment must be numbered and barcoded as described below. In summary the recommendations stipulate that the trade item must be assigned a unique GTIN-13 represented in a EAN-13 Barcode unless other specific criteria need to be considered. Broadly additional criteria are sale in North America, the barcoding of small items that cannot be easily labelled with an EAN-13 Barcode or the need to encode additional information.

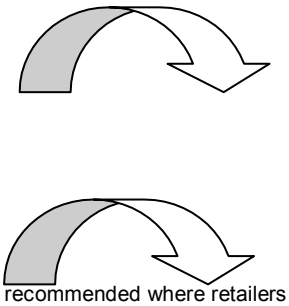
Notes:
All variations (different pack size, carton size, colour, variety etc.) require a separate GTIN.

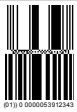
Unless products are to be sold in the North American and Canadian markets companies will generally use the EAN-13 Barcode. Please consult GS1 if your trade item is to be sold within North America and Canada.

6.4.1 Trade Items Sold at Retail Point-of-Sale (POS) without additional attribute information

Application Area	Attribute information other than GTIN required	Encoded GTIN	Recommended Symbology to Select From
Retail Point-of-Sale only 	**No**	**GTIN-13** **GTIN-12 may be required for North America**	**EAN-13 (or GS1 DataBar)** **UPC-A (or GS1 DataBar)** *(**GS1 DataBar** has been approved for bilateral use between trading partners from 2010 and, in 2014 GS1 DataBar becomes an open Symbology and all scanning environments must be able to read these symbols)
Example Products • **Juice** • **Biscuits** • **Cereals** • **Dairy** • **Bakery** • **Canned Goods**	**Example Symbology**      * UPC-A/GTIN-12 primarily for Nth America ** DataBar only recommended where retailers and suppliers have agreed and indicated compatibility.	 EAN-13  UPC-A*  GS1 DataBar  EAN-8	

6.4.2 Small Items Sold at Retail Point-of-Sale (POS) without additional attribute information

<table>
<tr><th>Application Area</th><th>Attribute information other than GTIN required</th><th>Encoded GTIN</th><th>Recommended Symbology to Select From</th></tr>
<tr><td>Retail Point-of-Sale only - small items
  </td><td>No</td><td>GTIN-8</td><td>EAN-8 (or GS1 DataBar)
*(GS1 DataBar has been approved for bilateral use between trading partners from 2010 and, in 2014 GS1 DataBar becomes an open Symbology and all scanning environments must be able to read these symbols)</td></tr>
<tr><td>Example Products
• Lipsticks
• Chewing Gum
• Cigarette Lighters</td><td colspan="3">Example Symbology
EAN- 8
 

 
GS1 DataBar**
** DataBar only for recommended where retailers and suppliers have agreed and indicated compatibility</td></tr>
</table>

6.4.3 Retail Point-of-Sale (POS) Barcode technical specifications for the Australian Grocery and Liquor Industry

If you require further information on any of the GS1 data carriers please consult the ***GS1 General Specifications*** or contact GS1 Australia***.***

EAN-13, EAN-8 and UPC-A Symbol Dimensions

The EAN-13, EAN-8 and UPC-A Barcodes are used to encode a GTIN-13, GTIN-8 and GTIN-12 and can be scanned at retail Point-of-Sale (POS).

Zero Suppressed Code UPC-A (UPC-E) Barcodes are not supported by the Australian Grocery & Liquor Industry.

Magnification
The GS1 standards specify that the magnification range for an EAN-13, EAN-8 and UPC-A Barcode being scanned at retail POS is 80-200% (X-dimension 0.26mm - 0.66mm). Reliability of scanning is always enhanced by selecting a magnification higher than the minimum i.e.: 100%.

For specific requirements please refer to the retailer's respective packaging and barcoding documentation on their websites.

Example of a nominal size EAN-13 Barcode (diagram is not to scale)

For all Symbol Dimensions please see the GS1 Technical Fact Sheets – EAN-13, EAN-8 and UPC-A Barcode Specifications https://www.gs1au.org/resources/technical-documents/?filter={{Type,Factsheet}}&pageno=2

Height

For minimum height specifications, please refer to the GS1 Technical Fact Sheets https://www.gs1au.org/resources/technical-documents/?filter={{Type,Factsheet}}&pageno=2For specific requirements please refer to the retailer's respective packaging and barcoding documentation on their websites.

Location

The barcode should be placed a minimum of 8mm from any seam, corner, packaging flap, crease or edge after the consumer unit is filled with product, where the size of the consumer unit permits.

6.5 Trade Items Sold in General Distribution and Sold at Retail Point-of-Sale (POS) *also referred to as Retail Cartons or Dual Purpose Cartons*

Retail Cartons or Dual Purpose Cartons are defined as a trade items that move through a Distribution Centre as a trade unit and are sold in store as a consumer unit. In summary the recommendations stipulate that the trade item must be assigned a unique GTIN-13 represented in an EAN-13 Barcode unless other specific criteria need to be considered. If the item is for sale in North America, a GTIN-12 encoded in a UPC-A structure may be appropriate.

Notes:

All variations (different pack size, carton size, colour, variety etc.) require a separate GTIN.

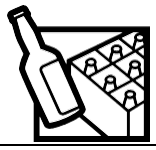
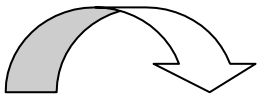
Unless products are to be sold in the North American and Canadian markets companies will generally not use the UPC-A Symbol.

UPC-A and UPC-E, Code 128 or GS1 DataBar™ Data Carriers will not scan at retailer Distribution Centres. GS1 DataBar Barcodes are currently not acceptable on Trade Units

For additional specific requirements please refer to the retailer's respective packaging and barcoding documentation on their websites

The Australian Grocery & Liquor Industry require EAN-13 Barcodes on all 6 packs of wine and spirits, as they are being sold at Point Of Sale (POS). For more information please contact GS1 Australia.

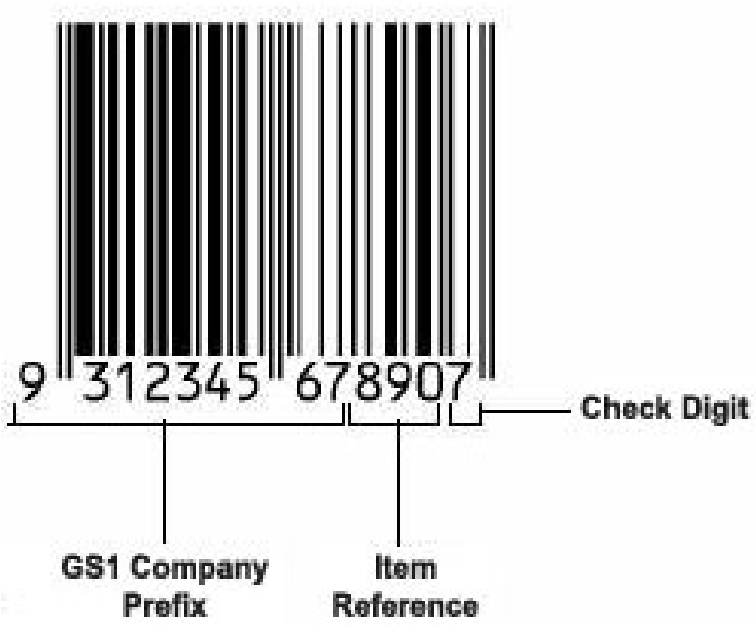
6.5.1 Items Sold at Retail Point-of-Sale (POS) and in general distribution without additional attribute information

Application Area	Attribute information other than GTIN required	Encoded GTIN	Recommended Symbology to Select From
Retail Point-of-Sale and Non-Retail (General Distribution) 	**No**	**GTIN-13**	**EAN-13**
Example Products • **Pet Food Bulk Bags** • **Cartons of Beer** • **Cartons of Soft Drink**	**Example Number**   		

6.5.2 Technical Specifications for Barcodes that are scanned in both General Distribution and sold at Retail Point-Of-Sale

Magnification

The specified Australian Grocery & Liquor Industry magnification factor for an EAN-13 Barcode being scanned in both scanning environments is 150 - 200% (X-dimension 0.50mm - 0.66mm).



Example of a nominal size (EAN-13 Barcode Symbol (diagram is not to scale)

For all Symbol Dimensions please see the GS1 Technical Fact Sheets – EAN-13 Barcode Fact Sheet https://www.gs1au.org/resources/technical-documents/?filter={{Type,Factsheet}}&pageno=2

Number of Barcodes
If printing directly onto Kraft (brown or white board) the specified Australian Grocery & Liquor Industry specifies that the EAN-13 Barcode be printed on 6 sides of the carton.

If printing directly onto white lined board two EAN-13 Barcodes are required on adjacent sides of pre-printed / post printed (not online printing) trade units.

Where print and apply labels are used, a minimum of two EAN-13 Barcode labels are required on adjacent sides.

For additional specific requirements please refer to the retailer's respective packaging and barcoding documentation on their websites

6.6 Trade Items Not Sold at Retail Point-of-Sale (POS)

Trade items that are sold and move through the supply chain but are not sold at retail. In summary the recommendations stipulate that the trade item must be assigned a unique GTIN-13 represented in an EAN-13, ITF-14 or GS1-128 Barcode or GTIN-14 represented in an ITF-14 or GS1-128 Barcode unless other specific criteria need to be considered.

Note:
All variations (different pack size, carton size, colour, variety etc.) require a separate GTIN.

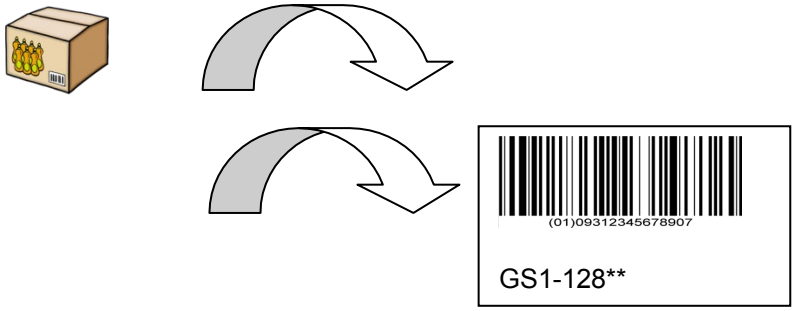
Unless products are to be sold in the North American and Canadian markets companies will generally not use the UPC-A Symbol.

UPC-A and UPC-E, Code 128 or GS1 DataBar™ Data Carriers will not scan at retailer Distribution Centres. GS1 DataBar Barcodes are currently not acceptable on Trade Units

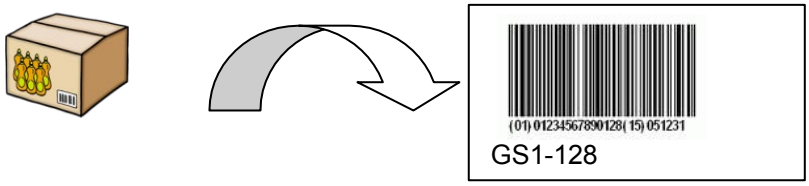
For additional specific requirements please refer to the retailer's respective packaging and barcoding documentation on their websites

6.6.1 Non-retail items without additional attribute information

Application Area	Attribute information other than GTIN required	Encoded GTIN	Recommended Symbology to Select From
Non-Retail (General Distribution), directly printed on carton or package corrugate	**No** 	**GTIN-12, GTIN-13 or GTIN-14 (for groupings of identical items)**	**ITF-14** **GS1-128**
Example Product	**Example Symbology**		

• **Cartons of retail items such as Dishwashing Detergent, Nappies and other items without batch or expiry**	 * GS1-128 should be reviewed carefully as there are numerous ways to use this symbology. Please consult the ***GS1 General Specifications*** or contact GS1 Australia.

6.6.2 Non-retail items with additional attribute information

Application Area	Attribute information other than GTIN required	Encoded GTIN	Recommended Symbology to Select From
Non-Retail (General Distribution), directly printed on carton or package corrugate 	**Yes**	**GTIN-12, GTIN-13 or GTIN-14 + attribute data**	**GS1-128**
Example Product • **Cartons of retail items such as Dairy, and Meat**	**Example Symbology**  * GS1-128 should be reviewed carefully as there are numerous ways to use this symbology. Please consult the ***GS1 General Specifications*** or contact GS1 Australia.		

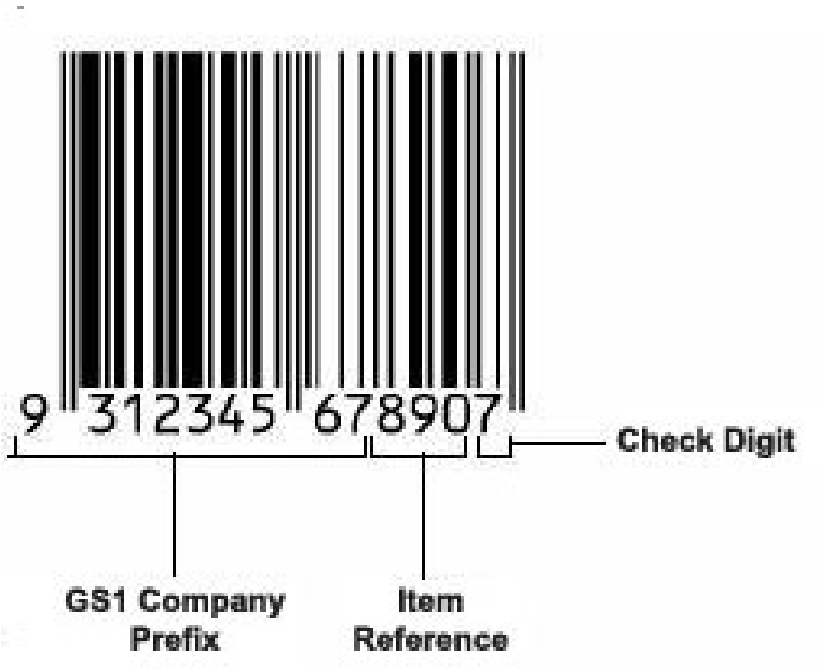
6.6.3 Non-Retail Barcode technical specifications for the Australian Grocery and Liquor Industry

If you require further information on any of the GS1 data carriers please consult the *GS1 General Specifications* or contact GS1 Australia.

Magnification

EAN-13 Barcode Symbol Dimensions
The EAN-13 Barcode Symbol is used to encode a GTIN-13.

The GS1 standards specify that the magnification range for an EAN-13 Barcode Symbol that is being scanned in a General Distribution Scanning environment is 150 - 200% (X-dimension 0.50mm - 0.66mm).



Example of a nominal size EAN-13 Barcode Symbol (diagram is not to scale)

If you require further information please consult the ***GS1 General Specifications*** or contact GS1 Australia***.***

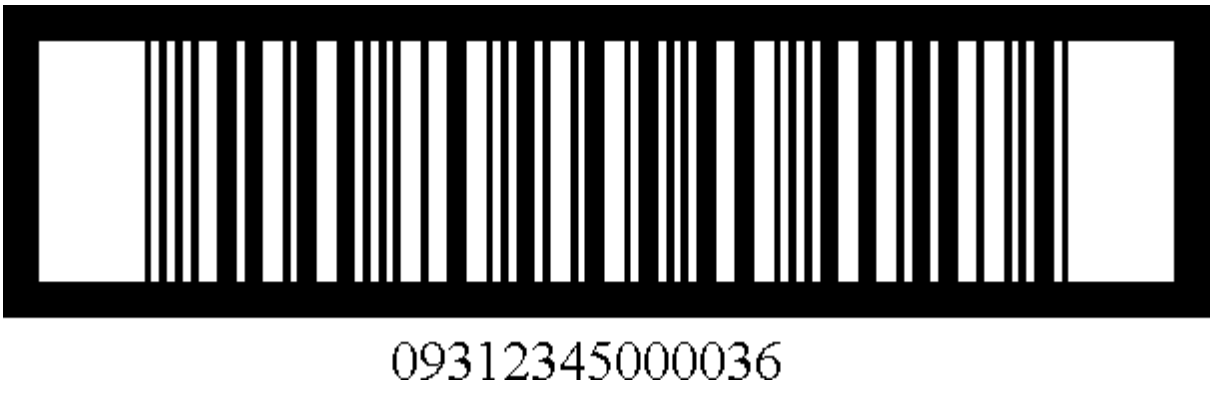
ITF-14 and the GS1-128 Symbol Dimensions
The ITF-14 and GS1-128 Barcode Symbols are used to encode a GTIN-14 as well as a GTIN-13 with a filler zero.

The specified magnification range for ITF-14 and GS1-128 Barcodes is between 48.7% and 100%. For all scanning environments printing at the higher end of the magnification range is recommended.

Regardless of the scanning environment, ITF-14 Barcodes with a magnification less than 62.5% should not be printed directly onto corrugated fibreboard.

GS1-128 Barcodes are not recommended for printing directly onto corrugated fibreboard.

For additional specific requirements please refer to the retailer's respective packaging and barcoding documentation on their websites



Example of a ITF-14 Barcode (diagram is not to scale)

Example of a GS1-128 Barcode (diagram is not to scale)

If you require further information please consult the ***GS1 General Specifications*** or contact GS1 Australia***.***

Height
For scanning in a General Distribution Scanning environment (automated scanning), the minimum recommended bar height for a ITF-14 and a GS1-128 Barcode is 32mm

Elongated barcodes where possible are useful for increasing scannability. These are suitable for very large cartons, plastic wrapped bundles, odd shaped boxes.

For additional specific requirements please refer to the retailer's respective packaging and barcoding documentation on their websites

For Shelf Ready Packaging - The barcode should not be printed on the display front of the package that is displayed to the customer. If the tray height is less than 35mm, the barcode should not be printed directly on the corrugate package, to meet the GS1 minimum barcode height (32mm) requirements. In this case the barcode should be applied to the outer packaging.

For further information on Shelf Ready Packaging requirements for the Grocery and Liquor Industry please refer to the Trading Partner Forum website www.tradingpartnerforum.com.au

Number of Barcodes
If printing directly onto corrugated brown board the Australian Grocery & Liquor Industry requirement is that the barcodes are printed on all 6 sides of the pre-printed trade units.

If printing directly onto white lined board a minimum of two barcodes are required. Where print and apply labels are used, a minimum of two barcode labels are required.

7 Logistics Labels

Please refer to Section 5.4 GS1 Logistics Label Format for the Australian Grocery and Liquor Industry. For further information on logistic unit labelling for the Australian Grocery and Liquor Industry, an TPF (originally ECRA) toolkit has been developed and can be obtained by contacting GS1 Australia.

Note: Information contained on the GS1 Logistics Label is negotiable between suppliers, customers and transporters/consolidators. These guidelines in no way limit any other information, which may be required by each party in the supply chain.

For additional examples of logistic label formats for the Australian Grocery and Liquor Industry, please refer to the retailer's respective packaging and barcoding documentation on their websites.

8 Table of commonly used Application Identifiers

		Format		
AI	Full Title	AI	Data	Data Title
00	Serial Shipping Container Code (SSCC)	n2	n18	SSCC
01	Global Trade Item Number (GTIN)	n2	n14	GTIN
02	GTIN of Trade Items Contained in a Logistic Unit	n2	n14	CONTENT
10	Batch or Lot Number	n2	an..20	BATCH/LOT
11*	Production Date (YYMMDD)	n2	n6	PROD DATE
13*	Packaging Date (YYMMDD)	n2	n6	PACK DATE
15*	Best Before Date (YYMMDD)	n2	n6	BEST BEFORE or SELL BY
17*	Expiration Date (YYMMDD)	n2	n6	USE BY or EXPIRY
21	Serial Number	n2	an..20	SERIAL
30	Count of Items (Variable Measure Trade Item)	n2	n..8	VAR. COUNT
37	Count of Trade Items (Logistics)	n2	n..8	COUNT
310n**	Net Weight, kilograms (Variable Measure Trade Item)	n4	n6	NET WEIGHT (kg)
315n**	Net Volume, litres (Variable Measure Trade Item)	n4	n6	NET VOLUME (l)
400	Customer's Purchase Order Number	n3	an..30	ORDER NUMBER
421	Ship To – Deliver to Postal Code with Three-Digit ISO Country Code	n3	n3+an..9	SHIP TO POST
8003	Global Returnable Asset Identifier	n4	n14 + an..16	GRAI
8004	Global Individual Asset Identifier	n4	an..30	GIAI
90***	Information Mutually Agreed Between Trading Partner	n2	an..30	INTERNAL
91-99***	Company Internal Information	n2	an..30	INTERNAL

* When only year and month are required DD must be filled with "00"
** The fourth digit, n, of this AI is a decimal point indicator
*** The actual data title may be specified by the issuer of the data

For details on specific AIs please refer to the ***GS1 General Specifications***

9 Appendix

9.1 Barcode Quality Check List

There are a number of aspects to printing the barcode to ensure that 100% readability is achieved and maintained. The checklist below itemises the things to check during the barcode generation and printing processes.

- Ensure that the correct barcode is used for the relevant product, application, and scanning environment
- Check that the barcode will remain readable in the environment in which the product will be stored, handled, and distributed
- Ensure that the Check Digit is correct
- Check the size of the barcode, both the magnification and the bar height
- Ensure that there are adequate Quiet Zones, and that any optional Quiet Zone Indicators are correctly placed
- Check that the contrast between the bars and the background is adequate, and that the colours chosen will scan
- Make sure that the colour of the contents of the packaging will not unduly affect the contrast between the bars and spaces
- Check the position of the barcode on the final, formed product
- Ensure that no shrink-wrap, tape, or other printing will obscure the barcode on the finished product
- Ensure that no other barcodes will be visible or show through from the inside of the pack
- Carry out routine verification at all levels of packaging to ensure that the barcode complies with the required quality standard, and to identify any potential problems
- Check the print quality regularly throughout the print run by verifying the barcode quality
- Notify trading partners of the GTINs and the products they identify in good time
- Consider having GS1 Australia prepare a Barcode Verification Report on the artwork for you prior to the final print to help detect any errors or areas for improvement

Some in-house printing methods, particularly on-line ink jet printing, require attention to the total print process and on-going maintenance.

The GS1 specifications for printing barcodes are explicit in that if the specified procedures are followed, with routine quality control, you can produce barcodes that scan consistently.

Note: It is recommended that the quality of the barcodes be assessed. This can be achieved through the use of the GS1 Barcode Check Service. Please refer to section 13.2.2 for further information or contact GS1 Australia.

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10 Global Location Numbers

10.1 Introduction

On a daily basis information related to parties and locations is generated and communicated throughout the business world in vast quantities. Names and addresses are put on envelopes for the mail, the point to which a delivery is to be made is put on transport documentation, EDI network addresses are provided in an electronic message, etc. These are just a few examples of the many applications in existence today, which identify parties or locations in trade or other communications.

With the advent of electronic communication, the need for the identification of parties and locations has become more acute. The use of numeric identification instead of full alphanumeric names and addresses is the key to the successful implementation of an eMessaging project.

Global Location Numbers (GLNs) offer an internationally recognised standard solution to the identification of parties and locations.

Once assigned at source, i.e. in general by the party owning the location, the GLN becomes a unique and universal reference, which can be used by all.

10.2 Definition of the Global Location Number (GLN)

The GLN is a thirteen-digit non-significant reference number used to identify:

- Parties, e.g. Legal entities or organisations, business functions, groups.
- Physical entities, e.g. a door of a warehouse, a particular room in a building

Global Location Numbers (GLNs) can be used to identify anything which is, or can be, addressed. Some examples of this would include companies, departments, rooms, factories, shelves, delivery points, network addresses, etc.

Details associated with a GLN, e.g. name and address, location type, contact persons, communications numbers, banking information, delivery requirements or restrictions, etc., are stored in the computer files of the system for later retrieval.

Although a GLN is strictly a reference key and does not carry any information on the location it identifies, it has a standard format and is structured to allow each GLN to be unambiguous and unique worldwide.

The format of a GLN is a thirteen-digit, fixed length numeric field, structured in the same way as a GTIN-13.

GLNs are mainly used in eMessaging to identify the sender and recipient of an electronic transmission and any party relevant to the transaction, e.g. buyer, seller, carrier etc.

GLNs can also be used in a barcode format to identify a physical location or to encode the identification of relevant parties in logistic applications, e.g. “Ship-to” location number. The GS1-128 Barcode is used to encode a GLN but a filler zero must be added to the front of the GLN to create a 14 digit number. In addition, the appropriate Application Identifier should be used according to the rules specified in the ***GS1 General Specifications***.

GS1 Australia member companies that have been allocated a GS1 Company Prefix for item identification can use the same GS1 Company Prefix for assigning GLNs. Companies that are not members of GS1 Australia can still use GLNs. These companies should contact GS1 Australia for further information.

11 Asset Numbering

The GS1 System provides a method for the identification of assets. The object of asset identification is to identify a physical entity as an inventory item.

Asset Identifiers may be used for simple applications, such as the location and use of a given fixed asset (e.g. a personal computer), or for complex applications such as recording the characteristics of a returnable asset (e.g. a reusable beer keg), its movements, its life-cycle history and any relevant data for accounting purposes.

GS1 System asset identifiers can be used to identify any fixed assets of a Company. It is left to the discretion of the issuer to determine whether the Global Returnable Asset Identifier (GRAI), AI (8003), or Global Individual Asset Identifier (GIAI), AI (8004), is more suitable for the application concerned.

Asset identifiers must not be used for any other purpose and must remain unique for a period well beyond the lifetime of the relevant records.

If a company assigns asset identifiers to trade items supplied to its customers, the company must ensure that the asset identifiers are never re-used.

11.1 Global Returnable Asset Identifier (GRAI) – AI (8003)

A Returnable asset is a reusable package or transport equipment of a certain value, such as a beer keg, a gas cylinder, a plastic pallet, or a crate. The GS1 System identification of a returnable asset, the Global Returnable Asset Identifier (GRAI), enables tracking as well as recording of all relevant data.

A typical application using a GRAI is in tracking returnable beer kegs. The owner of the beer keg applies a barcode carrying a GRAI to the keg using a permanent marking technique. This barcode is scanned whenever the keg is supplied full to a customer and scanned again when it is returned. This scanning operation allows the beer keg owner to automatically capture the life-cycle history of a given keg and to operate a deposit system, if desired.

Note: A GRAI identifies a physical entity as a returnable asset. When such a physical entity is used to transport or to contain a trade item, the element string AI (8003) must never be used to identify the transported or contained trade item.

11.1.1 Allocating a Global Returnable Asset Identifier (GRAI)

The structure of the data for a GRAI can include two parts: the mandatory GRAI and an optional serial number. The GRAI is composed of the GS1 Company Prefix of the company assigning the asset identifier, and the asset type. The latter is assigned to uniquely identify, together with the GS1 Company Prefix, a particular kind of asset. The GRAI remains the same for all identical returnable assets. Although consecutive numbering is recommended, the structure is left to the discretion of the assigning company.
The owner of the asset assigns the optional serial number. It denotes an Individual Asset within a given asset type. The field is alphanumeric and is used to distinguish individual assets with the same asset types.

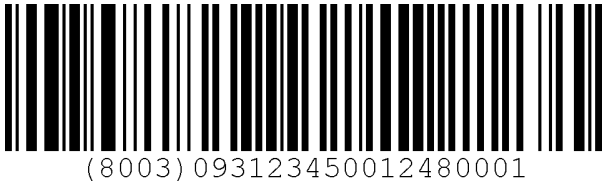
The format of the GIAI:

GS1 Company Prefix:	The GS1 Company Prefix is allocated by GS1 Member Organisations. GS1 Australia allocates a nine-digit GS1 Company Prefix (in the past a seven digit GS1 Company Prefix was issued). This is preceded by a filler zero
Asset Type:	This is a number assigned by the owner of the asset to uniquely identify each type of asset
Check Digit:	Validates the accuracy of the entire number by mathematical formula

Note: The AI (8003) is not part of the Check Digit Calculation

The Serial Number (Optional):	This is assigned by the owner of the asset. It identifies an individual asset within a given asset type. The field is alphanumeric and variable in length up to 16 characters

Figure 29: Global Returnable Asset Identifier, AI (8003), represented in a GS1-128 Barcode



11.2 Global Individual Asset Identifiers (GIAI) – AI (8004)

In the GS1 System, an individual asset is considered a physical entity made up of any characteristics.

The Global Individual Asset Identifier (GIAI) identifies a particular physical entity as an asset. It must not be used for other purposes and must be unique for a period well beyond the lifetime of the relevant asset records. Whether or not the assigned GIAI may remain with the physical item when changing hands depends on the particular business application. If it remains with the physical item, then it must never be re-used.

This element string might, for example, be used to record the life-cycle history of a wine vat or barrel. By symbol marking the GIAI, using AI (8004), on a given vat, or barrel, wine manufacturers are able to automatically update their inventory database and track assets from acquisition until retirement.

11.2.1 Allocating a Global Individual Asset Identifier (GIAI)

The GS1 Company Prefix is the one allocated to the company assigning the individual asset reference.

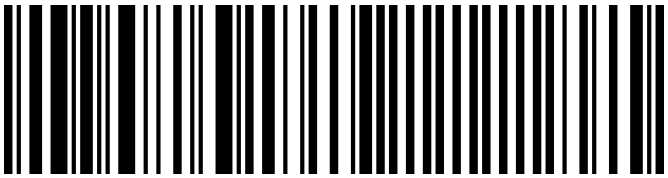
The format of the GIAI:

GS1 Company Prefix:	The GS1 Company Prefix is allocated by GS1 Member Organisations.
The Individual Asset Reference :	This is allocated and structured at the discretion of the holder of the GS1 Company Prefix. The data can be alphanumeric, and is of variable length, ensuring that the entire GIAI is not longer than 30 characters.
Check Digit:	Validates the accuracy of the entire number by mathematical formula

Note: The AI (8004) is not part of the Check Digit Calculation.

The exact method used to allocate the GIAI is left to the discretion of the issuing Organisation. However, each GIAI must be unique for each individual asset being identified and, for ease of administration, the GS1 System recommends that GIAIs be allocated sequentially and not contain classifying elements.

Figure 30: Global Individual Asset Identifier, AI (8004), represented in a GS1-128 Barcode



(8004)9312345000000001

12 Emerging Technologies

12.1 EPC Network & Radio Frequency Identification (RFID)

Global trade involves moving goods and tracking them around the world. GS1 has developed standards for the EPC network, which combines low cost RFID technology, existing communications network infrastructure and the Electronic Product Code (EPC). The EPC Network will make organisations more effective through real and timely visibility of information about items in the supply chain.

The EPC network incorporates global standardisation of tags and readers, a standard for encoding most GS1 Identification keys into EPC tags, a method for filtering RFID data and Standards for storing and later retrieving event based information in an EPC Information Service (EPCIS), an Object Naming Service (ONS) registry for locating the source of specific item information and a Discovery Service for locating EPCIS repositories that may also have information specific to that item. Global standards have been developed with direct input from the GS1 community and end users.

The use of RFID technology has some advantages over linear barcodes in that;

- It does not require line of sight
- Multiple items can be read
- Some tags have read/write ability and have larger data storage capacity
- Some tags have additional functionality such as temperature monitoring

12.2 GS1 DataMatrix

GS1 DataMatrix is a standalone two-dimensional matrix symbology that is made up of square modules arranged within a perimeter finder pattern. Data Matrix has been used in the public domain since 1994 mainly on very small items that require a symbology with a square aspect ratio and/or cannot be marked with the allocated packaging space by existing GS1 DataBar and Composite Symbols (see footnote 1 on page 8).

Some of the production processes that can be used to produce GS1 DataMatrix Symbols are as follows:

- Direct part marking, such as is done by dot peening on items, such as automotive, aircraft metal parts, medical instruments, and surgical implants
- Laser or chemically etched parts with low contrast or light marked elements on a dark background (e.g., circuit boards and electronic components, medical instruments, and surgical implants)
- High-speed ink jet printed parts and components where the marked dots cannot form a scannable linear symbol

GS1 DataMatrix Symbols are read by two-dimensional imaging scanners or vision systems. Most other scanners that are not two-dimensional imagers cannot read GS1 DataMatrix. GS1 DataMatrix Symbols are restricted for use with new niche applications that will involve imaging scanners throughout the supply chain.

13 Services Offered by GS1 Australia

13.1 Introduction

A new era demands new solutions and new solutions demand new services. Consequently GS1 Australia has invested heavily in a series of initiatives geared toward helping members successfully implement eCommerce based supply chain management strategies.

Through our specialised member assistance divisions: Industry Management, Accreditation, National Product Catalogue and Professional Services, we are positioned to respond more efficiently to member needs.
By utilising these services as appropriate, you can gain greater control over your business and prepare for the future.

13.2 The Services

13.2.1 Customer Engagement

The Customer Engagement Team provides assistance to GS1 Australia's Members, enabling them to equip themselves with the knowledge needed to adopt the GS1 Standards successfully.

Membership of GS1 Australia allows the use of the GS1 System for supply chain management and eCommerce processes.

It also provides you, the member, with a wide range of assist services, which include; assistance on how to apply numbers and barcodes, helpdesk support on GS1 System queries, onsite visits, advice on GS1 System implementation, industry guidelines and education & training.

As a member, you can call on the Customer Engagement Team as an invaluable resource for achieving greater control over day-to-day supply chain processes and business transactions.

As part of GS1 Australia's commitment to industry, Customer Engagement Team is also responsible for the delivery of the 'Customer Engagement Program' that assists the industry wide adoption and education of the GS1 System. Currently GS1 works with eighteen industry sectors in Australia to improve supply chain efficiency between trading partners by utilising eCommerce and GS1 Global Standards.

For further information on Customer Engagement, please visit
http://www.gs1au.org/industry/

13.2.2 Barcode Check - Barcode Verification Reporting

GS1 Australia offers a barcode verification report service to all members. Barcodes are tested for print quality against ISO standards to ensure they will be able to be scanned successfully through the supply chain. We also test the validity of the number encoded and ensure it is unique to this product and within the brand owner's available allocation.

A full Barcode Verification Report is issued for each test that confirms compliance and makes educational suggestions for improvement where applicable.

For further information on Barcode Check, please visit
http://www.gs1au.org/services/barcode_testing/

13.2.3 National Product Catalogue (Previously GS1net) Global Data Synchronisation Service

Because integrity of data is crucial to eCommerce, National Product Catalogue has been developed as a secure data synchronisation service, holding records of significant volumes of bar-coded items, including grocery, liquor, healthcare, hardware, auto aftermarket, general merchandise, office products and much more. Each record contains a broad range of fields that include product identifiers, images, description, dimensions, barcode testing status, customer specific pricing and trading terms.

The National Product Catalogue has been created to meet the following needs:

- Allow all trading partners to electronically synchronise data and remove errors associated with paper-based processes.
- Provide retailers, wholesalers, and other industry stakeholders with an inexpensive means of accessing information on available products and their master data attributes.
- Provide a single point of entry and retrieval data repository, to enable data integrity that is essential to minimising errors in eCommerce transactions.

Notably, National Product Catalogue has already been endorsed by major trading partners in the Australasian Healthcare, Grocery, Liquor, Foodservice and Hardware industries.

For further information on National Product Catalogue , please visit
http://www.gs1au.org/services/National Product Catalogue /

13.2.4 GS1 Consult

GS1 Australia members requiring additional onsite implementation support can benefit from GS1 Australia's Consult Services' expert and independent assistance. GS1 Consult provides dedicated consulting services covering all elements of the GS1 System for unique item identification, barcoding and RFID, electronic messaging and data synchronisation...

GS1 Consult advisors offer a cost-effective and relevant means to come to terms with GS1 System processes and benefits. GS1 Consult can help you with all aspects of your implementation project, including:

- Project Planning, Management and Facilitation
- Business process analysis and design
- Selection of required hardware and software
- Development of functional specifications for systems integration
- Training and change management programs
- Compliance audits of internal processes, systems and applications to meet specific industry or trading partner requirements

GS1 Consult also offers a range of tailored programs designed to implement the GS1 System for internal operational improvements.

GS1's Consult advisors not only have a deep technical understand of the GS1 System, but also have a wealth of implementation expertise across a number of industry sectors, including wholesale / retail, manufacturing, automotive aftermarket, hardware, healthcare, liquor, building and agriculture. As a result, we can help to deliver complete end-to-end solutions by providing members with unbiased advice on hardware and software, facilitating implementation and training staff and management.

For more information on any of the above services, please contact GS1 Australia

13.2.5 GS1 Locatenet

GS1 Locatenet is a central directory of GS1 Global Location Numbers (GLNs) which identify physical, operational and legal locations. GLNs may be assigned to pricing locations, ship-from locations, ship- to destinations, eMessaging addresses and more.

GS1 Locatenet delivers the ability for trading partners to communicate location master data using GS1 global standards. GS1 Locatenet facilitates the dissemination of quality location data from a central, validated, electronic source, supported and administered by GS1 Australia.

Whilst developed initially for the Healthcare sector to support the National Product Catalogue), GS1 Locatenet is available to all users of GLNs, across all industries.

For further information on GS1 Locatenet, please visit https://www.gs1au.org/our-services/locatenet/

13.2.6 GS1 Recallnet

GS1 Recall is GS1 Australia's Recall & Withdrawal Notification Service.

GS1 Recall is a standardized, industry-driven communication tool enabling manufacturers to share real-time product recall and withdrawal notifications information with their trading partners in a secure and efficient manner.
This user-driven online tool is being developed through an industry consultation and collaboration process and is based on local and global best practices.

GS1 Recall enhances existing recall and withdrawal notification processes and leverages GS1 standards and GS1 keys, including Global Trade Item Number (GTIN), Global Location Number (GLN), Global Service Relation Number (GSRN), and the Global Document Type Identifier (GDTI).

For further information on GS1 Recall, please contact GS1 Australia on 1300 Barcode (1300 227 263).

13.2.7 Training Services

Four different training modes make GS1 learning convenient even for the busiest of schedules. An array of education options and training sessions allows members to get the supply chain management education they need, regardless of where they live or when they are available.

Members can select from:

13.2.7.1.1 Classroom Sessions

Traditional classroom training sessions offer the opportunity to learn from expert instructors. Classes run throughout the day and allow new and existing members to gain better insight and understanding of the GS1 System.

13.2.7.1.2 Online Courses

For members who find it difficult to travel to a classroom, GS1 Australia training is as close as the internet. An online training tool, GS1 LEARN allows members to take a series of courses on essential supply chain concepts, anywhere and at their own pace, 24 hours per day, seven days a week.

13.2.7.1.3 Web Interactive Training

New members can take advantage of GS1's web-interactive training, or "webinars" for an introduction to the GS1 System and all the information and tools needed to print barcodes on their products. The introductory multimedia presentation connects participants with a GS1 expert live via a telephone conference call, while following the presentation on the web page.

13.2.7.1.4 Knowledge Series 101

Members as well as non members can get a deeper understanding on some of the GS1 standards supporting electronic messaging, radio-frequency identification (RFID) and other technologies.

13.2.7.1.5 Sessions at the GS1 Works

Nothing can quite compare to the impact of a day spent at GS1 Australia's GS1 Works, which delivers a number of supply chain learning programs specifically developed for small, medium and large enterprises. GS1 Works takes participants on an educational journey through the supply chain and is relevant to every sector of the economy. It demonstrates, in a clear and easily understandable manner, how sound supply chain management techniques can benefit your business and provide the foundation for current and future eCommerce strategies. GS1 Works is a very effective way to introduce staff to the fundamentals of supply chain management - from raw material, through manufacture, shipping and on to Point-of-Sale.

For further information on GS1 Training Services, please contact GS1 Australia on 1300 Barcode (1300 227 263).

Other Useful Information can be downloaded from
http://www.tradingpartnerforum.com.au/publications/2016/4/21/b2b.html

- Operational B2B Roadmap
- Express Receipt Roadmap
- Multi-coded pallet Guidelines
- Getting the best out of Pallet Labels
- Accurate Product Measurement

And further information is available at:
http://www.tradingpartnerforum.com.au/publications/2016/4/22/on-shelf-availability.html

- Carton Identification Guidelines