

The GS1 Logistics Label

The purpose of the GS1 Logistics label provides information about the unit to which it is fixed, clearly and concisely. The core information on the label should be represented both in machine (bar code) 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 information following is a reference for the design of logistics labels. This application is supported and complimented by Application Identifiers and the GS1-128 (formerly known as UCC/EAN-128) symbology. These are important components of the logistics label and apply to all of the specifications relating to the logistics label.

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 logistics units
- the efficient presentation of text and machine readable data (bar codes)
- 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 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.

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 of text and graphics, e.g. to and from addresses
- Bar codes (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), AI 00. The SSCC is a unique identification number assigned to each specific logistics unit. In principle the SSCC is sufficient for all logistic applications.

Head Office
Axxess Corporate Park
Unit 100/45 Gilby Rd
Mt Waverley VIC 3149
Locked Bag 10
Oakleigh VIC 3166
T +61 3 9558 9559
F +61 3 9558 9551

Sydney Office
Lakes Business Park
Building 4B, 2-4 Lord St
Botany NSW 2019
Locked Bag 7002
Botany DC NSW 2019
T +61 2 9700 0933
F +61 2 9700 0820

National Number: 1300 366 033
ABN: 67 005 529 920

In an environment where Electronic Data Interchange (EDI) 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 EDI is not available at each point in the supply chain, or when redundancy is desired, certain additional elements (attribute information) of information are desirable. Each of these is also represented through the use of Application Identifiers (AI's).

Application Identifiers

Some of the following attribute information listed below is important for a party to identify for subsequent handling of the logistics unit or validation of its associated information. Such information may be optionally encoded using internationally agreed data structures and a bar code symbology that allows automatic scanning.

| | |
|-------------|------------------------------------|
| AI | 00 |
| Description | Identification of a logistics unit |
| Data Format | N18 |

The element string follows AI 00 is the SSCC which is the basic identification reference for logistics units.

| | |
|-------------|---|
| AI | 02 |
| Description | GTIN of the goods contained in the logistics unit |
| Data Format | N14 |

The element string AI 02 (which has a mandatory association with AI 37) may only be used for uniform logistics units, for example when all trade items within have the same GTIN.

| | |
|-------------|--|
| AI | 37 |
| Description | Count of trade items contained in the logistics unit |
| Data Format | N..8 |

Number of trade items contained in the logistics unit. Must only ever be used in conjunction with AI 02

| | |
|-------------|----------------|
| AI | 13 |
| Description | Packaging Date |
| Data Format | N6 (yymmdd) |

Identifies the packaging date. This is the date when the goods are packed as determined by the packager.

Details of other application identifiers can be referred to **GS1 Australia User Manual**

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.

- **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.
- **Supplier section:**
This section of the label contains information that is generally known at the time of packaging by the supplier. 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 trade item number, product variant; dates such as production, packaging, expiration, and best-before dates; and lot, batch and serial numbers.
The SSCC is applied here as the unit identifier.
- **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 ship to postal codes, AI (420), Consignment Numbers, AI (401), and carrier-specific routing and handling information.

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.

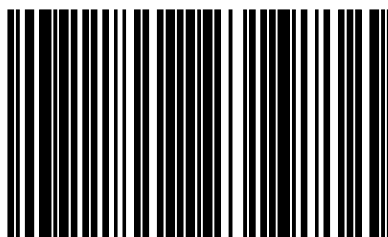
Within each section bar coded information is separated from text information to facilitate separate processing by automatic data capture and people. Bar codes are represented in the lower part of each section, while human readable information is shown in the upper part of the section. This facilitates 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.

Choosing The Right Data Carrier – GS1-128 (formerly UCC/EAN-128) Symbology

GS1-128 is an extremely flexible bar code and is used for the representation of Application Identifiers. It is **not** intended to be read on items passing through the retail point of sale.

GS1-128 Bar Code Symbol



(01)09312345678907

For printing of EAN/UPC, ITF-14 and GS1-128 bar codes on trade items the standards as specified in the **GS1 Australia User Manuals** are applicable.

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

The number of GS1-128 bar codes may be minimised by using the concatenation facility wherever possible. When not possible due to constraint of label size, data can be represented in multiple bar codes. The sequence of the bar coded data elements is irrelevant in terms of interpretation.

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

Use of the GS1 Logistics Label and its Placement on Logistic Units

Bar codes shall be in picket fence orientation on logistics unit. The bars and spaces shall be perpendicular to the base on which the logistic unit stands. In all cases other than the label for pallets containing Chep Crates, the SSCC shall be placed in the lowest portion of the label.

Consistency of symbol placement is important to the product identification and the scanning process. With manual scanning, variation of symbol placement makes it difficult for the scanning operator to predict where the symbol is located, and this reduces efficiency. With automatic scanning the symbol must be positioned so that it will pass through the field of vision of a fixed scanner as it travels past.

The label should be located on a minimum of two vertical sides of the logistic unit. The minimum is one label per logistic unit.

For all types of pallets bar codes should be placed at a height between **400 mm** and **800 mm** from the base of the unit. Including light margins, the bar codes should be no closer than **50 mm** from any vertical edge to avoid damage.

For pallets less than **400 mm** high, the bar codes should be placed as high as possible while protecting the bar code.

Details for logistics label placement can be referred to ***GS1 Australia User Manuals***

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 A6 format (105mm x 148mm) is sufficient for most requirements and is the predominant label size used. Other sizes are usually variations that result from other information requirements or the logistic unit size. A recommended guide is that the width of the label should remain constant at 105mm, while the height of the label varies depending on information requirements.

Serial Shipping Container Code (SSCC)

The Serial Shipping Container Code (SSCC) is a standard identification number, used for the unique identification of logistic (transport and/or storage) units.

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

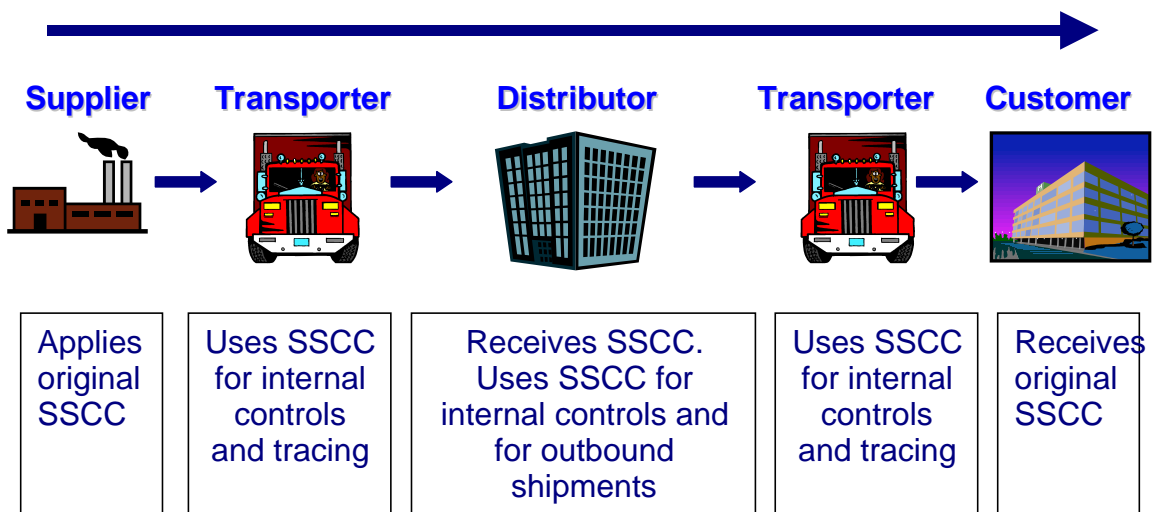
Scanning the SSCC marked on each logistic unit allows the physical movement of units to be individually tracked and traced by providing an information flow. It also opens up the opportunity to implement a wide range of applications such as cross docking, shipment routing, automated receiving etc.

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 bar code.

The SSCC uniquely identifies the entity (i.e. the shipping container or logistic unit to which the SSCC is applied) for the lifetime of that unit. The SSCC can be used by all parties in the supply chain as a reference number or license plate to extract all the relevant shipping container information held in computer files within the receiver's information systems. The SSCC acts as a "reference key" which unlocks the information in the computer systems.

The Use of the SSCC throughout the supply chain

The SSCC in the Supply Chain



It is essential that the recipient, the 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 Electronic Data Interchange (EDI), 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 EDI capable and where only some EDI 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 EDI capable and the whole suite of shipping messages are being exchanged.

How to Allocate the Serial Shipping Container Code (SSCC)

The SSCC should be handled as an *18-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:

The company responsible for the marking of the logistic unit is responsible for issuing the SSCC.

The format of the Serial Shipping Container Code is:

| | |
|------------------------------------|---|
| Application Identifier (00) | 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 it to the logistic unit. |
| EAN•UCC Company prefix: | The GS1 Company Prefix is allocated by GS1 member organisations. GS1 Australia allocates a nine-digit company prefix (in the past seven digits was also issued). It makes the SSCC unique worldwide but does not identify the origin of the unit. |
| Serial reference: | A serial number comprises either seven digits (nine if the GS1 Company prefix is seven digits) and uniquely identifies each transport package or logistic unit. The method used to allocate a unique number is at the discretion of the company coding the package. |
| Check digit: | Calculated using a mathematical formula. |

Figure 1: Serial Shipping Container Code (SSCC)



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Grocery Industry GS1 Logistic Label Requirements

Bar-code Information

The top barcode will contain information about the content of the pallet and must include as a minimum;

- **AI 02** - The Global Traded Item Number (GTIN) of the product **09334892002776** shown in both examples
- **AI 37** - The total number of traded units on the pallet (boxes, OM's or crates) **20** shown in both examples
- **AI 13** – Pack Date (optional) 22/07/04 shown in figure 1

The bottom bar code contains a unique number to each pallet;

- **AI 00** - The Serial Shipping Container Code (SSCC) **393123450000000013** is the number used in both examples

Human Readable Content

The “packed on date” must be in human readable form on the label but does not necessarily need to be contained within the barcode (unless the vendor wants to use this). Example in Figure 2

Placement

For non-Chep crate pallets the correct placement of the labels should be on two sides of the pallet on the fork lift entry sides. For each side of the pallet the label should be stuck squarely (not on an angle) onto a box on the pallet app. 600mm from ground in the centre of the pallet. If the pallet is wrapped in plastic the pallet labels must be placed on the outside of the plastic wrap.

For Chep crate pallets - the label is also placed on two sides of the pallet on the fork lift entry sides behind the prongs in the panel on a crate app. 600mm from ground in the centre of the pallet

THE BACKING PAPER OF THE PALLET LABEL MUST BE LEFT ON, THE LABEL MUST NOT BE STUCK DIRECTLY ONTO THE CRATE

GS1 Australia Barcode Verification Reports

When submitting a Chep crate pallet label to GS1 Australia for bar code verification, the supplier must state that it is a **"PRODUCE LOGISTICS LABEL"**

GS1 Australia will e-mail two barcode verification report “.pdf” files to the vendor who should forward this via e-mail to the Senior Produce Buyer. There are at least two barcodes on each pallet label hence the two reports.

Figure 1 - Example of Fresh Produce Logistics Label for Standard Pallets

This example shows pack date incorporated in the bar-code and human readable area.

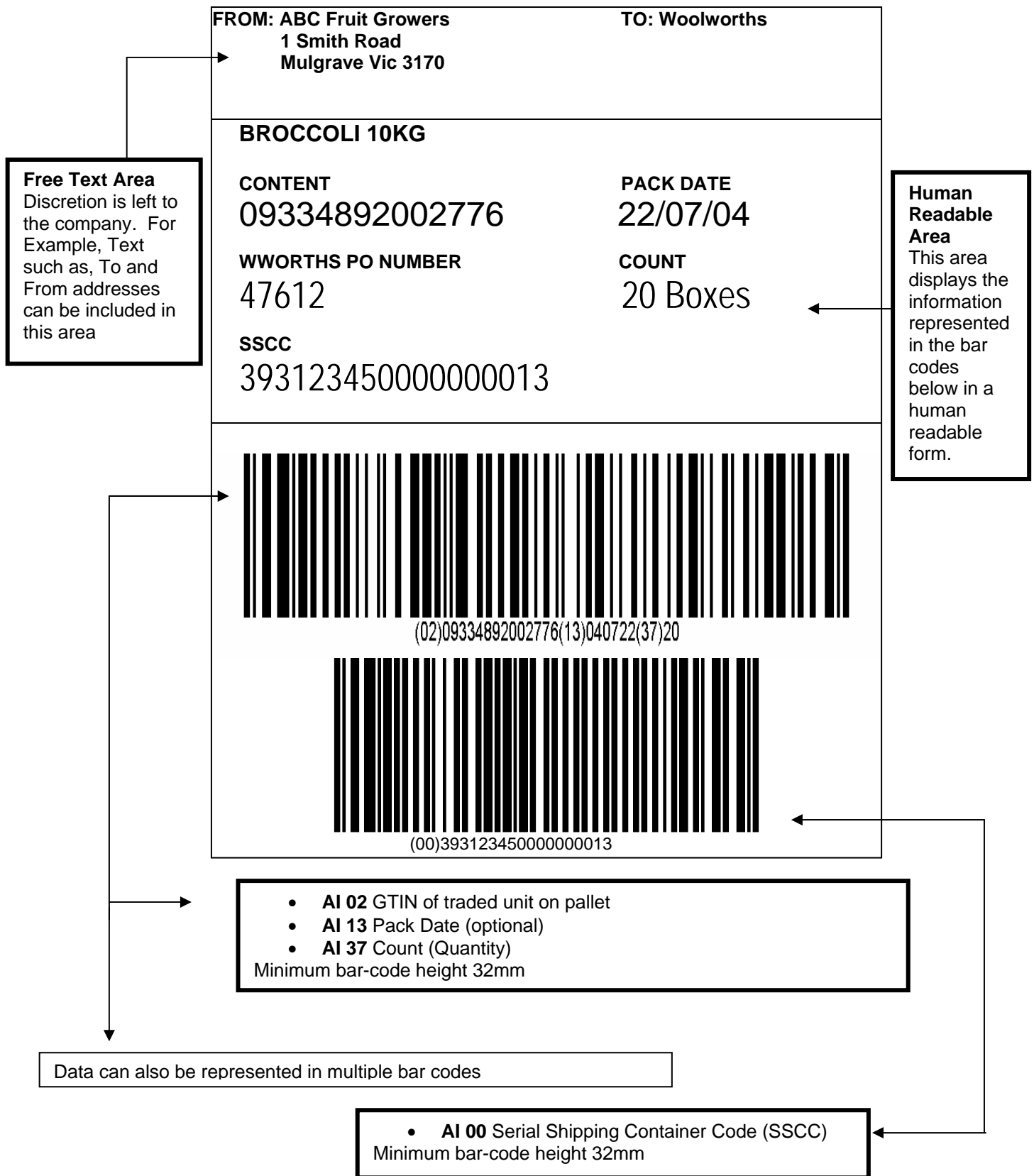


Figure 2 - Example of Fresh Produce Logistics Label for pallets that contain Chep Crates.

This example shows the pack date in the human readable area only. This pallet label has been designed with the Chep Crate in mind and will be hand scanned. Therefore barcode magnification is smaller than the standard pallet label.

