GS1 Logistic Label

Fact Sheet

A logistic unit is an item of any composition established for transport and/or storage which needs to be managed throughout the supply chain. The GS1 Logistic label allows users to identify logistic units uniquely so that they can be tracked and traced throughout the supply chain. The one mandatory requirement is that each logistic unit must be identified with a unique serial number, the Serial Shipping Container Code (SSCC) – much like a licence plate.

The purpose of the GS1 Logistic 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.

Scanning the SSCC barcode on each logistic unit allows the physical movement of units to be matched with the electronic business messages that refer to them. Using the SSCC to identify individual logistic units provides the opportunity to implement a wide range of applications such as cross docking, shipment routing, and automated receiving.

A GS1 Logistic Label can be applied to a single item, or a grouping of several items (single product or multiple products) 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
- Any other similar type of packaging created for the purpose of handling, storing or shipping

GS1 Logistic Label

The information included on a GS1 Logistic label comes in two basic forms.

1. Information to be used by people: This comprises Human Readable Interpretation (HRI) of the data encoded in the barcodes, and non-HRI text and graphics.
2. Information designed for data capture by machine: Barcodes.

The SSCC is the single mandatory element for all GS1 Logistic Labels. Other information, when needed, needs to be in-line with GS1 specifications. See for more information the GS1 Logistic Label Guideline.

Building blocks

A distinction is made between the types of data communicated on the Logistic label. This is expressed in three building blocks:

1. The top building block may contain anything, e.g. text and graphics. This may include extra information about the logistic unit that is not encoded in the barcode(s).
2. The middle building block contains non-HRI text reflecting the information represented in the barcode(s) using data titles rather than application identifiers (AIs), and optionally additional information not represented in barcodes (preferably including data titles).
3. The bottom building block contains the barcode(s) including human readable interpretation (HRI).

Note: Only the bottom building block is mandatory.

A GS1 2D symbol, if used, should be placed to the right of the non-HRI text including data titles within the middle building block.

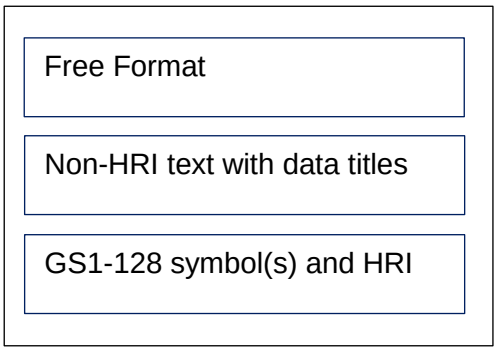

Figure 1: Building block of a GS1 Logistic Label

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.

Barcode Symbol Specifications

The GS1-128 barcode must be used for all information on the GS1 Logistic Label.

The number of GS1-128 barcodes may be minimised by using concatenation (stringing data elements together) wherever possible, accept the SSCC which always need to be in a separate barcode and placed at lowest position. When not possible due to constraint of label size, data can be represented in multiple barcodes.

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.

Barcode Orientation

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 barcode with the SSCC shall be placed in the lowest portion of the label.

Magnification

The magnification (X-dimension) range for the GS1-128 barcode symbol containing the SSCC is 48.7% to 92.5%.

The magnification range for barcode symbols on the logistic label that do not contain the SSCC is 25% - 100%. However, if a magnification factor of less than 48.7% is used it is likely that the reading distance will be reduced.

For all symbols selecting a magnification factor at the higher end of the permissible range will always enhance the scanning reliability.

Height of Bars

The minimum bar height for the GS1-128 barcode symbols on a logistic label is 32mm. The minimum symbol height indicated is for bar height only and does not include the Human Readable Interpretation.

Quiet Zones

Barcodes shall be printed with quiet zones (or light margins) at each side. The quiet zones must be at least 10 X-dimension (10X) in width. Centred barcodes will help ensure the quiet zones are respected.

Human Readable Interpretation

To facilitate key entry, Application Identifiers should be set apart from the data using brackets. The brackets are strictly for the Human Readable Interpretation and must not be encoded in the barcode symbol.

2D barcodes

Next to the mandatory GS1-128 symbols a 2D barcode may be used. A GS1 DataMatrix or a GS1 QR code with element string syntax are approved to be used on the logistic label. Other 2D barcodes are not approved on a logistic label.

When using 2D barcodes the barcode needs to be encoded with all the data that is encoded in the GS1-128 barcodes and can contain additional transport data.

A 2D barcode should be placed to the right of the non-HRI text including data titles within the middle building block. (See figure 1)

For placement, X-dimensions, minimum symbol height for 2D barcodes please refer to GS1 Logistic Label Guideline and General Specifications.

Label Location

Cartons and Outer Cases

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

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

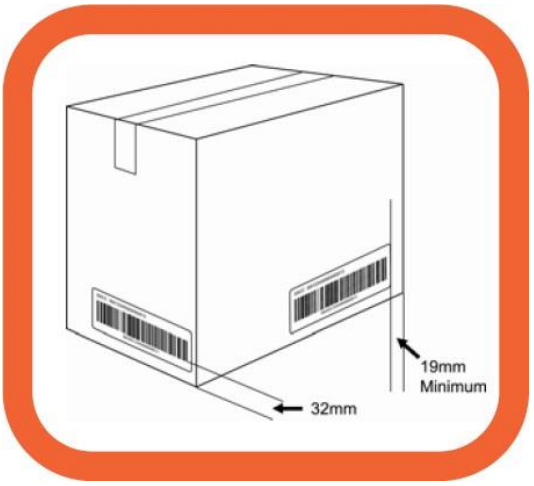

Figure 1: Preferred location GS1 Logistic Label on cartons and outer cases

Pallets and bulk items

For all types of pallets, including full pallets containing individual trade items and single trade items, barcode symbols should be placed at a height between 400mm and 800mm from the base of the unit including Quiet Zones (Light Margins). The barcode symbols should not be closer than 50mm from any vertical edge to avoid damage.

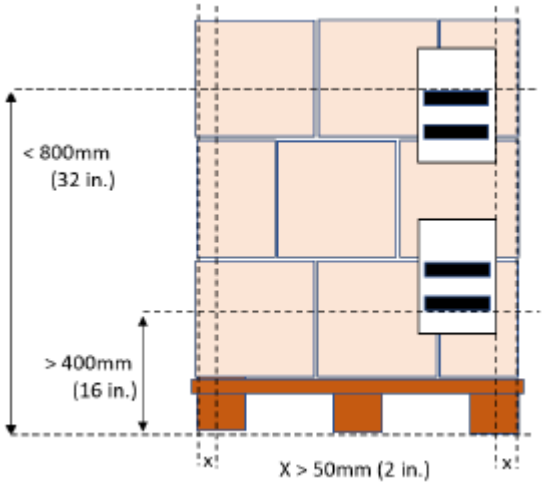

Figure 2: Preferred location on GS1 Logistic Label on pallets and bulk items

For pallets less than 400mm in height, the barcode symbols should be placed as high as possible while protecting the logistic label.

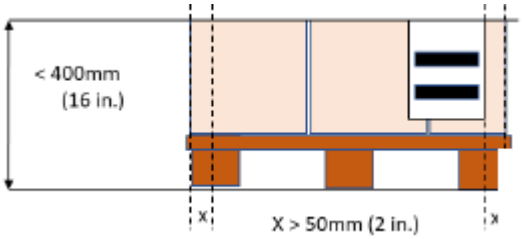

Figure 3: Preferred location GS1 Logistic Label on pallets less than 400mm in height

It is recommended that two identical logistic labels are placed on adjacent sides. If possible, one logistic label should be on one short side and a second, identical logistic label on the adjacent right-hand side.

See for more information the GS1 Logistic Label Guideline, Section 8.

GS1 Logistic Label Examples

The GS1 Logistic Label including an SSCC can be applied to all logistic units and see for a complete list of examples the GS1 Logistic Label Guideline, Section 10.

Here are some of the most common examples of GS1 Logistic Labels:

Figure 5: Example of a simple GS1 Logistic Label including trade item information.

Figure 6: Example of a GS1 Logistic Label for a logistic unit with different items.

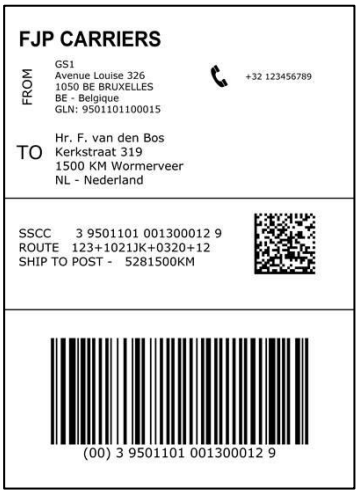

Figure 7: Example of a GS1 Logistic Label for a parcel (including a GS1 DataMatrix barcode)

Note: The mandatory data carrier used for a logistics unit is GS1-128 barcode. A GS1 DataMatrix or GS1 QR code symbol MAY be included in addition to the GS1-128 symbol(s). For placement, X-dimensions, minimum symbol height for 2D barcodes please refer to GS1 Logistic Label Guideline and General Specifications.

More information

For more information on the normative rules and best practice recommendations based on GS1 Logistic Label implementations around the world, please refer to the GS1 Logistic Label Guideline.

For more information on 2D barcodes on a logistic label and encoding transport process information, please refer to the Scan for Transport implementation guideline.

For a simple, easy to use solution for small businesses that need to create logistics labels, please refer to GS1 Australia's Logistics Labelling Tool. Alternatively, for more advanced logistic labelling needs, GS1 Australia recommends leveraging the GS1 Solution Provider network.

Additionally, to ensure GS1 Logistic Labels scan first time, every time, all over the world, GS1 Australia recommends leveraging the GS1 Barcode Check service.