

GS1 Logistic Label

Standards and National Market Specifications

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To view the GS1 Competition Law Caution in its entirety, follow the link:

http://www.gs1.org/gsmc/process/gs1_antitrust

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Contents

1. Introduction	7
2. Benefits from using the GS1 System and the GS1 Logistics Label	7
3. SSCC for unique identification of logistics units.....	8
3.1. Using SSCC advantages (ISSO 15459)	9
3.2. Good practices for SSCC allocation	9
3.2.1. SSCC management and traceability throughout the supply chain	9
4. GS1-128 Symbology (EAN/UCC 128)	11
4.1. GS1-128 Symbology main benefits	11
4.2. Application Identifiers (AI)	12
5. GS1-128 Logistics Label.....	13
5.1. Legal Regulation	14
5.2. Party responsible for the content of the Logistic Label	14
5.3. Homogeneous Pallets	14
5.3.1. GS1 Logistic Label structure (Homogeneous Pallets)	14
5.3.2. GS1 Logistic Label mandatory and optional data	17
5.3.3. Portuguese Nacional Market good practices and examples per sector	19
5.3.4. Logistics label dimensions	26
5.4. Heterogeneous Pallets	26
5.4.1. GS1 Logistics Label Structure (Heterogeneous Pallets)	27
5.4.2. Recommendation for the National Market (Heterogeneous Pallets)	28
5.5. Transport Boxes.....	33
5.6. Placement of the Logistics Label	35
5.6.1. On Pallets	35
5.6.2. On Transport Boxes.....	36
5.7. Quality Test.....	37
6. Appendix 1 – Glossary of Terms	38
7. Appendix 2 – FAQ	40

List of figures

Figure 1. Examples of SSCC logistic units identification (pallets)	8
Figure 2. Use of the SSCC in the supply chain	10
Figure 3. Maintaining the SSCC throughout the supply chain	10
Figure 4. Example of a SSCC encoded in GS1-128 symbology	11
Figure 5. Extract from the Application Identifiers List	12
Figure 6. GS1 Logistic Label Structure - Format	15
Figure 7. Table of Application Identifiers recommended by the Portuguese business sector and by GS1 Portugal	18
Figure 8. FMCG- Fast Moving Consumer Goods Logistic Label Example	19
Figure 9. Fruits and Vegetables Logistic Label Example	20
Figure 10. Cured Meat Products Logistic Label Example	21
Figure 11. Fish Logistic Label Example	22
Figure 12. Meat- Bovine Logistic Label Example	23
Figure 13. Eletronics Logistic Label Example	24
Figure 14. Parapharmacy Logistic Label Example	25
Figure 15. A5 Logistics Label Dimensions Example	26
Figure 16. Heterogeneous Pallet Logistics Label Example	27
Figure 17. Cross-docking Heterogeneous Pallet Logistics Label Example	28
Figure 18. Multiple Destination Heterogeneous Pallets – Scenario 1.	29
Figure 19. Multiple Destination Heterogeneous Pallets Example – Scenario 2.	30
Figure 20. Multiple Destination Heterogeneous Pallet Example– Scenario 3.	30
Figure 21. Packing list structure for the multiple destination heterogeneous pallet– Scenario 3.	31
Figure 22. Multiple Destination Heterogeneous Pallets Example - Scenario 4	32
Figure 23. Transport Boxes Label without Expiry Date Example	33
Figure 24. Transport Boxes Label with Expiry Date Example	33
Figure 25. Example of a label of Transport Boxes of commercialized products with variable measures (net weight in kilograms)	34
Figure 26. GS1 Logistics Label Placement on Pallets	35
Figure 27. GS1 Logistics Label Placement on Transport Boxes	36

1. Introduction

This document aims to provide guidelines on how to identify and barcoding information on logistic units using the GS1 Logistics Label.

It is a guide of best practices for the construction and use of the GS1 Logistics Label, aimed at bringing about a common approach, and which may serve as a point of reference for the majority of logistic processes (reception, warehousing, preparation of orders, shipment and transportation, cross-docking, etc.).

Based on the GS1 Standards and Guidelines, this document was developed with the support of the "GS1-128 Work Group", whose participants represent the various business partners in the national supply chain, including Producers, Logistics Operators, Distributors and Retailers. This Work Group's mission is to harmonize and create the best practices for the use of the GS1 Logistics Label and for the set of EDI (Electronic Data Interchange) GS1 Standards Messages.

All the recommendations described throughout this document come from GS1 recommendations aligned with the needs of the Portuguese market.

2. Benefits from using the GS1 System and the GS1 Logistics Label

GS1 System

The use of standards for the numbering and barcoding of trade items, logistic units, locations, assets, documents, among others, provides benefits in terms of the speed, accuracy in information management and also generates labor savings in the handling and distribution of goods throughout the entire supply chain. Companies should consider that the implementation and use of GS1 Standards helps them to work efficiently with their customers and business partners and mainly to improve their own in-house management of the supply chain.

Therefore, a number of benefits are common to all the parties involved in the supply chain:

- More accurate information
- Real-time information
- Reduced manual data entry
- Improved traceability (particularly in Product Recalls)
- Common identification for the whole industry and supply chain
- Improved stock handling
- Improved stock management
- Fewer errors in the orders processing (Picking)
- Fewer errors in the request shipment

GS1 Logistics Label

The GS1 Logistics Label is a global standard for all the parties involved in the supply chain. Using it brings the following main benefits:

- Single valid identification in the whole world for the logistic units
- Significant reduction in time, thanks to automatic data capture and verification in reception and shipment
- Faster and more accurate and reliable information provided to the customer during reception, thanks to the automatic reading of the label
- Reduction in time and costs thanks to the elimination of the successive labels applied by the participants in the supply chain
- Reliable data thanks to the integration of the information that is contained on the label with the GS1 international message standards for EDI
- Complete and automatic traceability throughout the logistics chain

3. SSCC for unique identification of logistics units

Logistic units are items made up for transport and distribution purposes, and pallets are one of the examples focused on throughout this section.

The Serial Shipping Container Code (SSCC) is the GS1 Identification Key used to identify individual logistic units. The logistic unit can be any combination of units placed together in a box, pallet or truck, which this specific load unit needs to be handled through the supply chain.

The SSCC enables a logistic unit to be located individually, providing the benefit of tracking and control of the order, through its delivery and automatic reception.

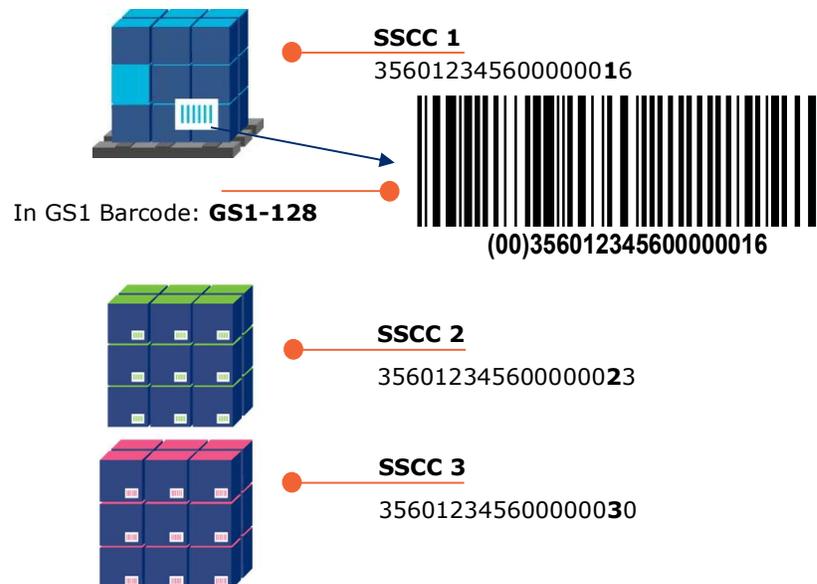
The only obligatory requisite is that each logistic unit is identified with a single/unique serial number, the SSCC. Scanning the SSCC barcoded in a GS1-128 symbol in each logistic unit allows the physical movement of units to be matched with the electronic flow of information (EDI messages) that refer to them.

The use of the SSCC for the identification of individual logistic units enables the implementation of a variety of applications, like cross-docking, shipment and automatic reception.

Extra information, such as the data of expiry dates, batches, shipment numbers, and locations (GLN's), among others, can also be shown and barcode in the GS1 Logistics Label.

The SSCC acts as a single, global identifier and provides access to the information stored in the information systems and may be transferred through EDI.

Figure 1. Examples of SSCC logistic units identification (pallets)



Note: The SSCC's serial reference component provides a very extensive numeric capacity, also guaranteeing a unique global identification.

3.1. Using SSCC advantages (ISSO 15459)

A SSCC acts as a « License Plate » from the ISO standards. In fact, ISO defined this standard to give to each transport unit a unique identification worldwide. This standard allows every party in the supply chain to work with multiple sectors by ensuring that each transport unit has an unambiguous identification.

As logistic units are handled by several parties - the sender, the receiver, one or more carriers, customs authorities, etc., there is a need to identify the unit so that reference can be made to associated information such as address, order number, contents of the unit, weight, sender, etc. The information is often held on computer systems and may be exchanged between parties involved via EDI (Electronic Data Interchange).

There are considerable benefits if the identity of the unit is represented in barcode format, or other RFID tag, and is attached to the unit so that:

- It can be read electronically, thus minimizing errors
- One identity can be used by all parties
- Each party can use the identity to look up its computer files to find the data associated with the unit and the identify code is unique and cannot appear on any other item during the lifetime of the unit

3.2. Good practices for SSCC allocation

As already stated, the SSCC is the only compulsory data on the logistic label, and normally it will be created by the company that is constructing the logistic unit. The best practice is that the creator of logistic unit should use its own GS1 Company Prefix.

If the logistic unit is not marked/identified with a SSCC when it is received, the subsequent party in the supply chain may and should allocate the SSCC. This party can be:

- Shipper
- Carrier or Freight Forwarder
- Logistics Services Provider
- Distribution Centre
- ...

This way logistic units must be identified in a standardized way using a SSCC so that it can be the key to logistical traceability.

If logistic unit is not broken or merged, it is recommended to maintain the initial SSCC throughout the supply chain. If logistic unit is broken and then reconstituted or merged, it is a new logistic unit. In that case, the party who create the new logistic unit must create a new SSCC and must record and manage link between the initial SSCCs and the new one(s).

3.2.1. SSCC management and traceability throughout the supply chain

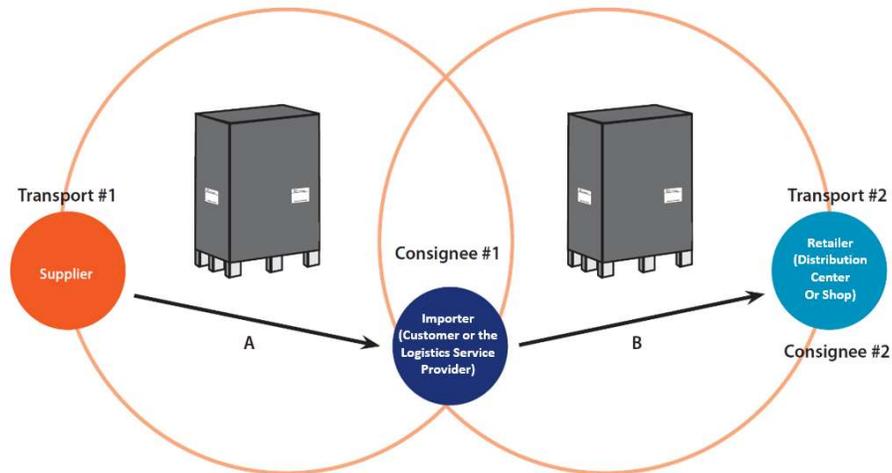
The important point to note is that the SSCC should remain the same for the whole lifetime of a logistic unit. In practical life, the SSCC is allocated when the logistic unit is built.

For example: Products are manufactured, assembled, and stored on pallets in the production plant. Normally the pallet label included the SSCC is applied to the pallet at the end of the production line. The SSCC remains on the pallet unit until the pallet is split e.g. in a warehouse or at the retailer.

The logistic unit may contain one or more labels with the same SSCC. But under no circumstances there must be different SSCC on the same logistic units simultaneously. From a traceability point of view, keeping the same SSCC on the logistic unit through the whole supply chain, gives all parties a common and unique reference back to the origin of the logistic unit who is responsible for the products.

This solution is cost efficient since the same label may be used without any cost of relabelling of the logistic units. Of course, the customer and carrier information may change through the supply chain, and some additional labelling must be done related to this information. Furthermore, using the same SSCC enables transparent EDI messages through the supply chain e.g. by use of dispatch advice.

Figure 2. Use of the SSCC in the supply chain



In the above figure, the Customer or the Logistics Service Provider receives the logistic unit from the supplier with the original label and SSCC and also receives a dispatch advice containing the same SSCC and a specification of the products within the logistic unit. When shipping the logistic unit to the Distribution Centre (retailer) or directly to a Shop, the Customer or the Logistics Service Provider can use the same supplier section of the logistic label (if no items were added to or removed from the logistic unit) but have to add new customer and carrier information. He may also redirect the dispatch advice related to the information of the logistic unit.

Reverse logistic needs also occur in the supply chain, e.g. food crises where recalls or withdrawals are to be made. For these situations it is easier to ensure the logistic unit traceability when it keeps the same SSCC.

The SSCC is the basic identification system for the logistic units. ERP-systems should be constructed in a way that must prevent duplicates of the SSCC's.

Note: Under no circumstances two different logistic units can have the same SSCC simultaneously.

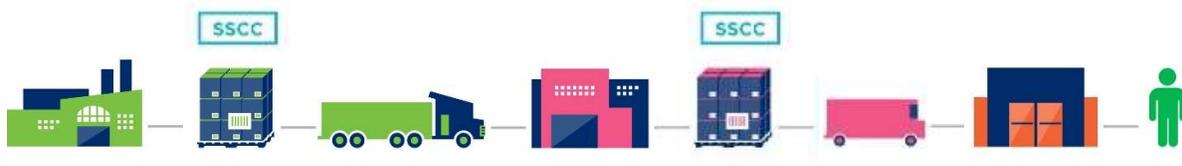


Figure 3. Maintaining the SSCC throughout the supply chain

4. GS1-128 Symbology (EAN/UCC 128)

The GS1-128 barcode symbol has been carefully designed through joint co-operation between GS1 and the AIM Global (Association for Automatic Identification and Mobility).

Use of GS1-128 barcode symbols provides a high degree of security and distinguishes GS1 System Element Strings data fields from extraneous non-standard barcode symbols.

The GS1-128 symbology is used for GS1 Logistics Labels. This symbology, which is used exclusively for GS1 System defined data structures, is a highly refined, secure, and space efficient alphanumeric symbology. The data carried by GS1-128 symbols must be structured using GS1 Application Identifiers.

Through GS1-128 it is possible to encode and capture additional data, for example referring to products. With this symbology is possible to integrate data such as expiry dates, production batches numbers, quantities, weights, amongst other relevant data for the daily operations of organizations. However, the data encoded in GS1-128 symbology varies according to the type of product.



Note: The technical structure of the GS1-128 symbology is detailed in the User's Manual document.

(https://www.gs1pt.org/wp-content/uploads/2019/07/Manual-Utilizador-GS1_2019.pdf)

4.1. GS1-128 Symbology main benefits

The main benefits associated to GS1-128 symbology came out from the use of the same barcode by all parties involved in the supply chain, greatly facilitating communication and collaboration between partners, given that, they all use the same language.

So, this symbology enables the requests follow-up through the SSCC leading to traceability, to the introduction of complementary product information and enables the concatenation of the data in the various companies' management systems.

In short, if GS1-128 symbology is correctly applied will provide gains through reduction of the order cycle, which, ultimately, leads to an increase in productivity.



Figure 4. Example of a SSCC encoded in GS1-128 symbology

4.2. Application Identifiers (AI)

So that the system can recognize data that is encoded in GS1-128 barcodes, Application Identifiers (AI's) are used. AI's are small, pre-defined elements that are inserted in the sequence data of the barcode lines and which provide information on the meaning and format of the data that follow them.

AI's work as a list of generic codes of data fields for multiple sectors and applications in national and international supply chains. Each GS1 AI is comprised from two to four digits and provides the definition, format and structure of the data fields encoded in a GS1-128 barcode.

Each information encoded in GS1-128 must have an Application Identifier that determines the data, its format and structure. Concatenation is an effective means to include various Application Identifiers in a single barcode and should be used to save space on the label and optimize the operation of scanning/reading. GS1 Identification Keys are complemented by the GS1 Application Identifiers.

For example:

- There is a GS1 AI for each GS1 Identification Key, allowing these to be encoded in GS1-128 (e.g. GTIN, SSCC, etc.)
- Additional data are always associated to a GS1 Identification Key
- GS1 AI's allow complementary data (e.g. batch, expiry date, etc.) associated to the GS1 Identification Keys

According to the type of data to be encoded there is a specific structure for the use of the different Application Identifiers. Each AI can be formed by two, three or four digits, followed by the corresponding data field.

For example:

- AI (00) – SSCC, Format n2 + n18 ⇨ (00)356012345600000012
- AI (10) – Batch, Format n2 + an..20 ⇨ (10)abcd12
- AI (17) – Expiration Date, Format n2 + n6 ⇨ (17)220201

AI's	FULL TITLE	FORMAT
00	SSCC - Serial Shipping Container Code	n2 + n18
01	GTIN of the Consumer Unit / GTIN of the Dispatch Unit	n2 + n14
02	GTIN of Products Contained in other units (mandatory with AI 37)	n2 + n14
10	Batch Code	n2 + an..20
11	Production Date (YY/MM/DD)	n2 + n6
13	Packaging Date (YY/MM/DD)	n2 + n6
15	Best Before Date (YY/MM/DD) (best by)	n2 + n6
17	Expiration Date (YY/MM/DD) (use by)	n2 + n6
37	Quantity of the trade item contained in other units (mandatory with AI 02)	n2 + n..8
400	Customer's Purchase Order Number	n3 + an..30

Figure 5. Extract from the Application Identifiers List

! **Note:** There are currently more than 150 Application Identifiers developed according to business partner's needs. Can see the complete list in: (<https://www.gs1.org/standards/barcodes/application-identifiers/00?lang=>) Furthermore, the AI's list recommended by the Portuguese business sector can be referred in the chapter "5.3.2. GS1 Logistics Label mandatory and optional data", page 19.

5. GS1-128 Logistic Label

Global Standard for all parties in the supply chain. This standard enables the automatic traceability of the logistic units, whether they are pallets or cases.

This label avoids the successive relabeling of logistic units as they move through the supply chain and gives the advantage and benefit to use only one logistic label. The GS1 Logistic Label must substitute the proprietary label existing with numerous (nonstandard) proprietary formats. The GS1 logistic label contains all information necessary for usage during reception, warehousing, shipment and transport of goods from the picking location to the delivery point.

GS1 Logistics Label implementation addresses various needs expressed by the parties involved in the supply chain. It ensures the link, the consistency between the physical flow of goods and the information flow through the exchange of Standardized EDI messages (enhanced by GS1 eCom Standards for the exchange of electronic messages between trade partners).

The Logistics Label is designed to accommodate the information needs of all types of good.

Below are listed the main Benefits with the GS1 Logistic Label:

- Unique worldwide identification for the logistic unit
- Significant saving of time thanks to the automatic data capture and checking of the shipment
- Faster information more precise and reliable sent to the logistic service client during the receipt thanks to the scanning of the label
- Saving of time and cost thanks to the elimination of labels successively applied by each actor in the supply chain
- Enhanced information reliability thanks to the removal of multiple transcriptions and data capture for the same information
- Linkage with the standard and international EDI messages thanks to the information which is contained in the message
- Full traceability all along the logistic chain, notably thanks to the full compatibility with the standard ISO/IEC 15459 often referred to as the 'ISO License Plate'.

In short, the advantages obtained from using the GS1 Logistics Label are observed in full when the same Logistics Label is used from the point of manufacture until the dismantling of the pallet.

This simple procedure eliminates unnecessary manual operating processes, such as the print and apply labels to pallets. It leads to cost reductions, increased productivity and the maximization of information accuracy and quality up to its arrival to the recipient's warehouse. It allows automatic accounting of information that the supplier sends in the receptors information system. This last process is only possible through standardized electronic communication.

5.1. Legal Regulation

According to many legal regulations the one who offers the product on the market is responsible for its quality and safety. To offer on the market means to store and present goods to be sold to clients, to deliver them as well as any other way to introduce these goods to the market, with only exception of direct sale.

The creator of the label must put information on the logistic label of goods subject to legal regulations.

The GS1 Logistic Label produced by the manufacturer or on his behalf should be considered as a part of the logistic unit. It should not be damaged or destroyed in any stage in the supply chain as long as the logistic unit remains.

5.2. Party responsible for the content of the Logistic Label

In this document, the description assumes that it is the consignor of the goods that produces the logistic label and applies it to the package. This may be the manufacturer or Logistics Service Provider. Responsibility for the correctness of all the information contained on the label is assumed to rest with the consignor.

5.3. Homogeneous Pallets

A homogeneous pallet is comprised of products of the same type, i.e. the items which make up the pallet have the same GTIN, the same expiry date and the same batch number.

In this situation, besides the identification code of the pallet (SSCC), already explained, it is possible to encode additional data in a barcode. This data can be applied directly to the consolidation of a logistic unit (usually a pallet), data like the GTIN, and if there is an expiry date or a batch number, etc.

Each logistic unit should have its own SSCC as a unique identification code. Bear in mind that a logistic unit can transport one or more labels, but only SSCC according to the GS1 System Standard.



Note: A SSCC can be reused one year after it was created. Some specific regulatory, industry organization specific or traceability requirements may extend this period.

5.3.1. GS1 Logistic Label structure (Homogeneous Pallets)

The GS1 Logistic Label is made up from three blocks:

- The lowest block contains the barcode information
- The middle block contains human readable information which reflect barcode data (as a safeguard if the barcode cannot be decoded).
- The top block is a free format "text box" usually used for addresses, logos, etc.



Figure 6. GS1 Logistic Label Structure - Format

Note: As seen in the GS1 Logistics Label above, it is divided in three blocks. Having all the information organized into a standard format and into three separate sections make it easier to interpret the information and process the associated units, either automatically or manually.

5.3.1.1. Top Block

The top block contains free format information (Free Text) that has no barcode symbol equivalent and is entirely at the discretion of the labeler. This may include company specific codes or any other type of information.

5.3.1.2. Middle Block

O The middle block is comprised by human readable interpretation equivalent to data elements represented in GS1-128 barcode symbols. The information is text designed to support manual operations and to facilitate key entry in menu driven systems, if necessary.

Regarding data content:

- ✓ The entire barcoded data must be given in Human Readable Interpretation
- ✓ The data content should be at least 7 mm in height
- ✓ Application Identifiers (AIs) are not included in Human Readable Interpretation and are replaced by the data titles

Example:

(00) 356067890000000154

by:

SSCC: 356067890000000154

Regarding data title, it is important to understand the following aspects:

- Data titles are the standard abbreviated descriptions of data fields used to denote the Human Readable Interpretation of encoded data
- They are prefixes of the Human Readable Interpretation to support manual interpretation of data fields. They can also be used adjacent to other text or barcode symbols to clarify content, such as the word “from” adjacent to a sender’s address
- Data titles should be used in English as specified in the ‘GS1 General Specifications’. In addition, data titles can be provided in the local language of the creator of the logistic unit if necessary
- Other text information may be added that refers directly to the logistic unit



Note: The data titles can be consulted in the AI’s
(<https://www.gs1.org/standards/barcodes/application-identifiers/00?lang=>)

5.3.1.3. Lowest Block

The lower block contains the GS1-128 barcodes that represent the data shown in the middle block.

However, it should also have human readable interpretation essentially for the following points:

- As a backup key entry and diagnostic aid, a human readable interpretation of each barcode symbol shall be provided. It includes Application Identifiers and data content
- To facilitate key entry, Application Identifiers (AIs) should be set apart from the data by parentheses
- The Human Readable Interpretation characters shall be no less than 3 mm high and clearly legible below the symbol



Note: The brackets should not be encoded in the GS1-128 barcodes. A verification process should be carried out to ensure the printing quality and the symbol decoding.

5.3.2. GS1 Logistic Label mandatory and optional data

The SSCC is applied in the Logistics Label as the unique identifier of the logistic unit, being the only obligatory data regardless of the product category.

It should also always be encoded in GS1-128 barcode and shown in numeric format. Thanks to the automatic capture of the SSCC code, the parties involved in the supply chain can ensure the logistic units traceability.

Other data can be used depending on the market needs, such as identification of the product (GTIN), batches, best before date, order number, etc.

The list of Application Identifiers (AI) below illustrates the identifiers recommended by the Portuguese business sector and GS1 to encode data related with products of different categories:

- Fast Moving Consumer Goods (FMCG)
- Fruit and vegetables
- Cured meat products
- Fish
- Meat
- Electronic
- OTC Pharmacy



Notes: Regarding table shown in figure below, it is important to take into consideration that:

- Only one Application Identifier AI (01) or AI (02) can be use in the same barcode. When AI (02) is applied, AI (37) and AI (00) are mandatory.
- Only one Application Identifier AI (15) or AI (17) should be used. To indicate only Year and Month, the Day (DD) should be filled in with "00".
- The fourth digit of this AI indicates the position of the decimal place
- Applied only together with AI (02)
- The country identification defined in the Standard ISO 3166 and 3166-2 is applied
- (s) Indicates the sequence of the processor in the supply chain

→ There are currently more than 150 Application Identifiers developed according to business partners needs. For the list of Application Identifiers, follow the link: (<https://www.gs1.org/standards/barcodes/application-identifiers/00?lang=>)

Considerations for allocation of information on GS1 Logistics Label:

- Maximum of 48 characters, per barcode line up to a maximum width limit of 165 mm
- Fixed data fields should be placed to the left of the barcode (e.g. GTIN, Expiration date, Net Weight in Kilograms)
- The SSCC must be coded alone on the last line of code (further down the label)

AI's	Notes	FULL TITLE	FORMAT	FMCG	Fruit and Vegetables	Cured meat products	Fish	Meat	Electronics	Parapharmacy
00		SSCC - Serial Shipping Container Code	n2 + n18	•	•	•	•	•	•	•
01	(a)	GTIN of the Consumer Unit / GTIN of the Dispatch Unit	n2 + n14	•	•	•	•	•	•	•
02	(a)	GTIN of the Products Contained in other units	n2 + n14	•	•	•	•	•	•	•
10		Batch Code	n2 + an..20	•	•	•	•	•	•	•
11	(b)	Production Date (YY/MM/DD)	n2 + n6	•		•	•		•	•
13	(b)	Packaging Date (YY/MM/DD)	n2 + n6	•		•	•	•	•	•
15	(b)	Best Before Date (YY/MM/DD)	n2 + n6	•	•	•	•	•		•
16	(b)	Sell by Date (YY/MM/DD)	n2 + n6		•					
17	(b)	Expiration Date (YY/MM/DD)	n2 + n6	•	•	•	•	•		•
251		Reference to Source Entity	n3 + an..30					•		
30		Variable Count	n2 + n..8	•			•	•		
310(n)	(c)	Net Weight (Kilograms)	n4 + n6		•	•	•	•		
330(n)	(c)	Gross Weight (Kilograms)	n4 + n6				•	•		
37	(d)	Quantity of the trade item contained in other units	n2 + n..8	•	•	•	•	•	•	•
400		Customer's Purchase Order Number (ISO-3166)	n3 + an..30	•	•	•	•	•	•	•
416		Global Location Number (GLN) of the production or service location	n3 + n13		•					
417		Party Global Location Number (GLN)	n3 + n13		•					
422		Country of Origin of the Trade Item (ISO-3166)	n3 + n3		•	•	•	•		
423		Country of Initial Processing (ISO-3166)	n3 + n.. 15					•		
424		Country of processing/ slaughtering (ISO- 3166)	n3 + n3				•	•		
425		Country of Disassembly (ISO-3166)	n3 + n3					•		
426		Country covering full process chain (ISO-3166)	n3 + n3					•		
7005		Catch Area (FAO)	n4 + an..12				•			
7006		First Freeze Date	n4 + n6				•	•		
7007		Harvest Date (start date and end date) (YY/MM/DD)	n4 + n12				•	•		
7008		FAO Code of Fish Species	n4 + an..3				•			
7009		Fishing Gear Type	n4 + an..10				•			
7010		Production method	n4 + an..2				•			
703(s)	(e) (f)	Processor Approval Number with ISO Country Code	n4 + n3 + an..27					•		
90		Information Mutually agreed (followed by "02" for "variety")	n2 + an..30		•					
90		Information Mutually agreed (followed by "04" for "category")	n2 + an..30		•					

Figure 7. Table of Application Identifiers recommended by the Portuguese business sector and by GS1 Portugal

Key:

- n – Numeric Characters
- n.. – Numeric Characters up to
- an.. – Alphanumeric up to

5.3.3. Portuguese National Market good practices and examples per sector

! **Notes:** All the label examples were made in the A5 format (210mmX148mm)

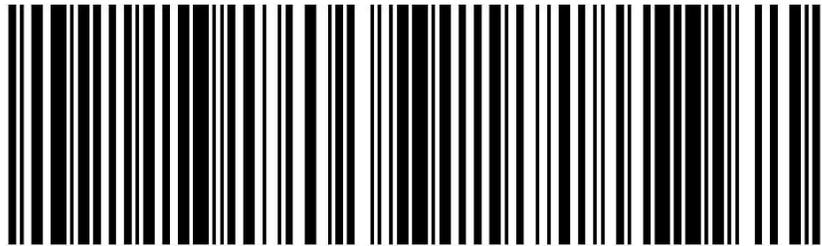
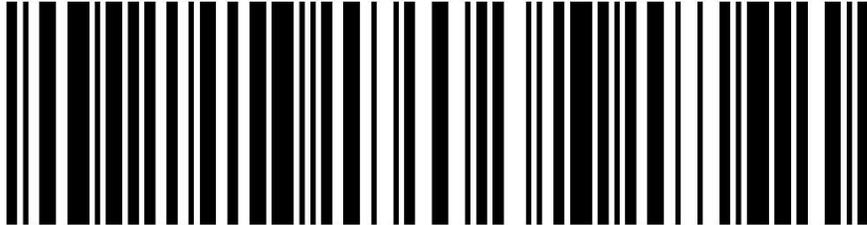
	<p>Estrada do Paço do Lumiar, Campus do Lumiar, Edifício K3 1649-038 Lisboa</p>
<p>FMCG Fast Moving Consumer Goods</p>	
<p>SSCC: 156012345678901235 Content: 15601234567899 Best before date: 2022-11-29 Quantity: 90 Batch: 123ABC123</p>	
 <p>(02) 1 5601234 56789 9 (15) 221129 (37) 90</p>	
 <p>(00) 1 5601234 567890123 5</p>	

Figure 8. FMCG- Fast Moving Consumer Goods Logistic Label Example

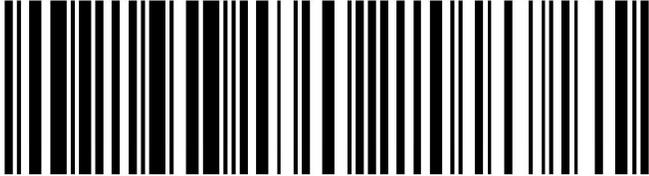
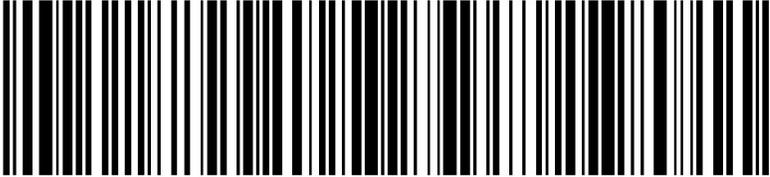
	Estrada do Paço do Lumiar, Campus do Lumiar, Edifício K3 1649-038 Lisboa
	Fruit and Vegetables
Product description: Fruit and Vegetables	
SSCC: 156012345678901006	Batch: BC-0987
Content: 95601234560018	Net weight: 450,50kg
Country of origin: 620 Portugal	Quantity: 75
 (02) 9 5601234 56001 8 (37) 75	
 (3102) 045050 (422) 620 (10) BC-0987	
 (00) 1 5601234 567890100 6	

Figure 9. Fruits and Vegetables Logistic Label Example

 **Notes:**

- The national market has a specificity, regarding the codification of AI's (90), where followed by the prefix "02" that indicates the "category" and followed by the prefix "04" that indicates the "variety".
- For more information about the requirements for the sector, consult the document "GS1-128 Logistics Label in the Fruit and Vegetable Sector" on the GS1 Portugal website: <https://gs1pt.org/guias-de-utilizacao/>

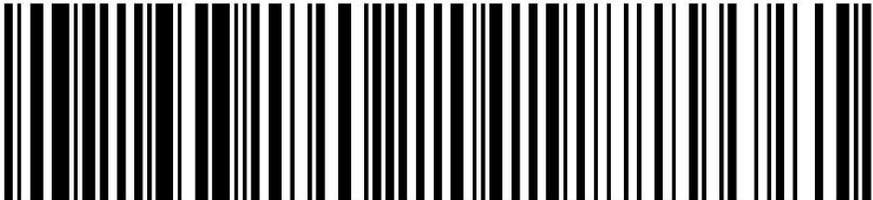
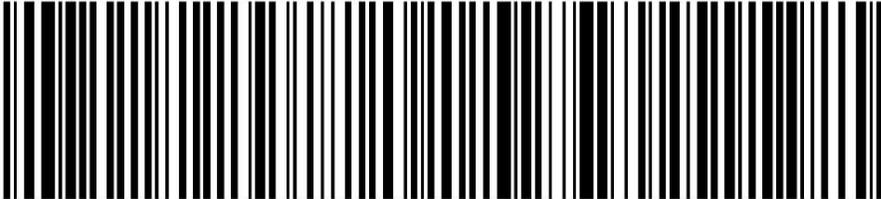
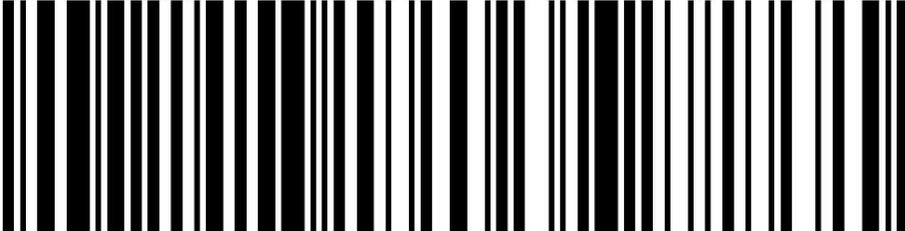
	Estrada do Paço do Lumiar, Campus do Lumiar, Edifício K3 1649-038 Lisboa
Cured Meat Products	
SSCC: 156012345678901006	
Content: 95601234560018	Batch: C-087
Best Before Date: 2022-09-04	Net weight: 400,50kg
Order Number: 901561200	Quantity: 70
 (02) 9 5601234 56001 8 (15) 220904 (37) 70	
 (3102) 040050 (400) 901561200 (10) C-087	
 (00) 1 5601234 567890100 6	

Figure 10. Cured Meat Products Logistic Label Example



Figure 11. Fish Logistic Label Example



Note: Relatively to the legal obligation (REG. UE 1379/2013) to identification of “Inland Waters”, that until the date of this document there was any global normalization, ISO, ONU-FAO, or European Council. With the elaboration of a **Fish Sector Work Group** GS1 Portugal defined a national “standard” which identification is made of an alphanumeric code with 8 characters. GS1 Portugal have the responsibility to do the maintenance and actualization of this list.

For more information contact: info@gs1pt.org

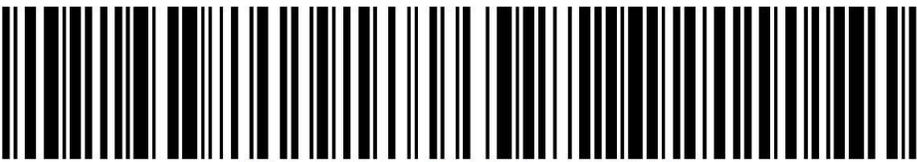
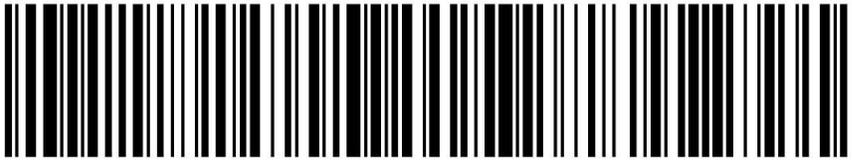
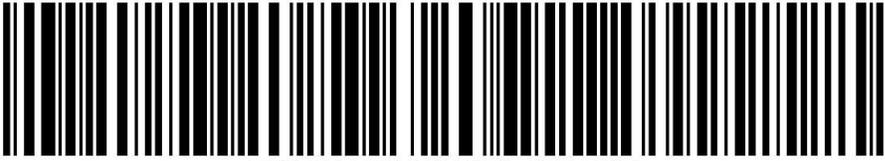
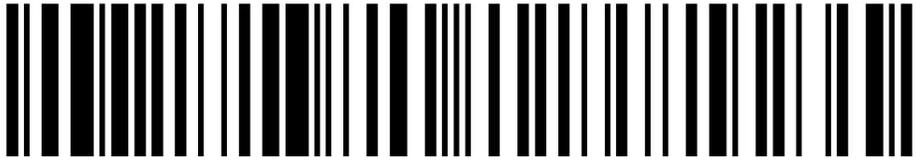
	<p style="text-align: right;">Estrada do Paço do Lumiar, Campus do Lumiar, Edifício K3 1649-038 Lisboa</p> <p style="text-align: center; font-size: 1.2em; color: orange;">Meat- BOVINE</p>
<p>SSCC: 056004593300340455</p> <p>Order Number: 874552341 Country of initial processing: 724 Espanha Country of processing: 620 Portugal Country of origin of a trade item: 620 Portugal Country of disassembly: 620 Portugal</p>	<p>Content: 95600346501438</p> <p>Quantity: 70 Batch: 23-169 Best Before Date: 2022-09-12 Number of processor: 620PTR004 First Number of processor: 620PTR010 Second Number of processor: 620PTR109</p>
 <p>(02) 9 5600346 50143 8 (37) 70 (10) 23-169</p>	
 <p>(15) 220912 (423) 724 (424) 620 (400) 874552341</p>	
 <p>(422) 620 (425) 620 (7030) 620PTR004</p>	
 <p>(7031) 620PTR010 (7032) 620PTR109</p>	
 <p>(00) 0 5600459 330034045 5</p>	

Figure 12. Meat- Bovine Logistic Label Example

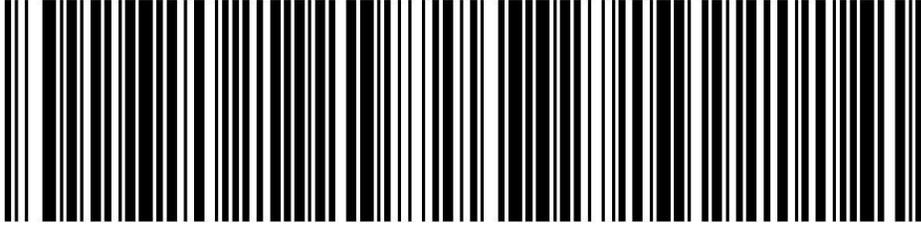
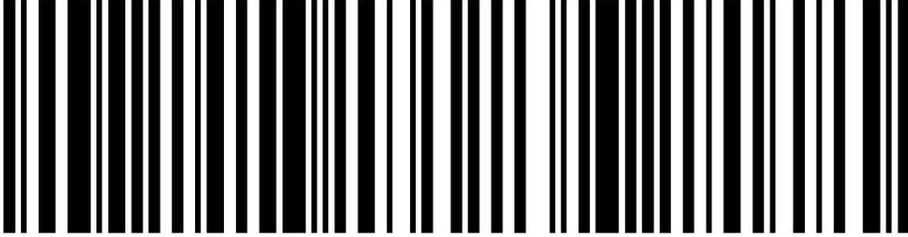
 <p>Estrada do Paço do Lumiar, Campus do Lumiar, Edifício K3 1649-038 Lisboa</p> <p>Eletronicos</p>
<p>SSCC: 156012340078900017 Content: 15600234560099 Quantity: 190 Batch: 12L-22</p>
 <p>(02) 1 5600234 560091 (37) 190 (10) 12L-22</p>  <p>(00) 1 5601234 007890001 7</p>

Figure 13. Eletronicos Logistic Label Example

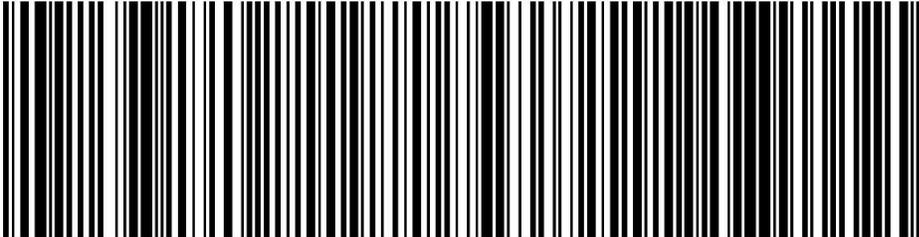
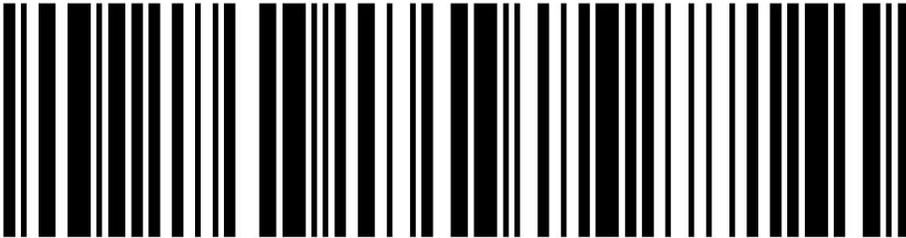
	Estrada do Paço do Lumiar, Campus do Lumiar, Edifício K3 1649-038 Lisboa
Parapharmacy	
SSCC: 656012346008901005 Content: 7560123456001 Best Before Date: 2024-08-26 Batch: CH-087J Quantity: 30	
 (02) 7 5601234 56001 4 (17) 240826 (10) CH-087J (37) 30	
 (00) 6 5601234 600890100 5	

Figure 14. Parapharmacy Logistic Label Example

5.3.4. Logistics label dimensions

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

- 1) A6 (105 mm x 148 mm) – 4 x 6 inch, which is particularly suitable when only the SSCC, or the SSCC and limited additional data, is encoded
or
- 2) A5 (148 mm x 210 mm) – 6 x 8 inch

However, the label can be any size that suits the labeler’s requirements, but it must be large enough to carry all the information required together with the GS1-128 barcodes. Factors influencing label sizes include the amount and a type of data required the content and X-dimensions of the barcode symbols used, and the dimensions of the logistic unit to be labelled.

Observe the following figure which illustrates the correct dimensions to be adopted:



Figure 15. A5 Logistics Label Dimensions Example

5.4. Heterogeneous Pallets

Heterogeneous or mixed pallets are logistic units comprising items with different specifications, meaning that is a pallet that includes different products and references which have different GTIN’s, expiry dates, batch numbers, etc.

Each logistic unit should have its own SSCC, as a unique identification code. Bear in mind that a logistic unit may carry one or more labels, but only one SSCC. The GS1 Standard recommends that independently of being homogeneous or heterogeneous a specific logistic unit should only have one SSCC.

Note: A pallet with the same item reference but with different batch numbers should be considered as a heterogeneous pallet.

5.4.1. GS1 Logistics Label Structure (Heterogeneous Pallets)

A heterogeneous pallet should contain only a label with the SSCC encoded in GS1-128 barcode.

Information regarding the composition of the logistic unit should be sent beforehand via EDI through a shipment advice message (DESADV in GS1 EANCOM® or Dispatch Advice in GS1 XML®) at the time of shipment.

The logistic unit reception confirmation should be made through the Receiving Advice message (RECADV in GS1 EANCOM® or "Receiving Advice" in GS1 XML®) after the confirmation.



Figure 16. Heterogeneous Pallet Logistics Label Example

Note: For consult the mapping of electronic messages (EDI) which originated in the GS1 EDI Working Group-

Standardized **message** of the **Shipment Advice (DESADV)** and **Receiving Advice (RECADV)** documents:

<https://gs1pt.org/wp-content/uploads/2021/11/GS1-Portugal-Mensagem-Aviso-de-Expedicao-DESADV-e-Aviso-de-Rececao-RECADV-v1.3.pdf>

Standardized **mapping** of the **DESADV** document (**Excel format**):

<https://gs1pt.org/wp-content/uploads/2021/11/Mapeamento-DESADV.xlsx>

Standardized **mapping** of the **RECADV** document (**Excel format**):

<https://gs1pt.org/wp-content/uploads/2021/11/Mapeamento-RECADV.xlsx>

5.4.2. Recommendation for the National Market (Heterogeneous Pallets)

All the recommendations described throughout this chapter come from the System of GS1 Standards aligned with the needs of the Portuguese market and in accordance with the work undertaken by the "GS1-128 Work Group".

Some of the solutions defined in this chapter may not fully meet the GS1 Standard. However, they were developed by the national Work Group based on the local needs and defined as a recommendation and national good business practice.

The Work Group participants represent the national supply chain different business partners from Producers, to Retailers, accounting also for Logistics Operators and Distributors.

The Work Group's mission is to standardize and create the best business practices for the use of the GS1 Logistics Label, as well as the GS1 standardized of EDI messages.

5.4.2.1. Indivisible Heterogeneous Pallets

When a heterogeneous pallet undergoes cross-docking, it is recommended the usage of one unique SSCC encoded in GS1-128 barcode.

Further information regarding identification of the products (GTIN's), batches and expiry dates should be sent beforehand through EDI (GS1 EANCOM® or GS1 XML®) shipment advice note.



Figure 17. Cross-docking Heterogeneous Pallet Logistics Label Example

5.4.2.2. Multiple Destination Heterogeneous Pallets

When a heterogeneous pallet received in the distribution center has products with different final destinations (e.g. different shops), it is called a multiple destination pallet.

In this physical flow (multiple destination pallets) the products are received, checked and separated by different destinations, and in this case, there is no storage for them.

In this situation and accordance with the needs of the national market different scenarios and recommendations for the use of the Logistics Labels can be found:

- **Scenario 1: GS1 Logistics Label – Unique SSCC on pallet**
- **Scenario 2: Several GS1 Logistics Labels – SSCC per columns of products**
- **Scenario 3: Packing list**
- **Scenario 4: Individual case identification and GS1 barcoding**

5.4.2.2.1. Scenario 1: GS1 Logistics Label – Unique SSCC on pallet

- 1) For this scenario is recommended the appliance of GS1 Logistics Label for- **Heterogeneous Pallets**.
- 2) The label should contain the SSCC encoded in GS1-128 barcode.
- 3) In the pallet the products should be separated by reference and conditioning in columns. In this scenario each product reference is restricted to the use of a **single batch** number.
- 4) Information related to products identification, e.g. GTIN's, batch, and expiry dates **shall be** provided and sent through EDI (GS1 EANCOM® ou GS1 XML®).

! **Note:** Restriction to a single batch number per reference on the pallet helps to guarantee products traceability.

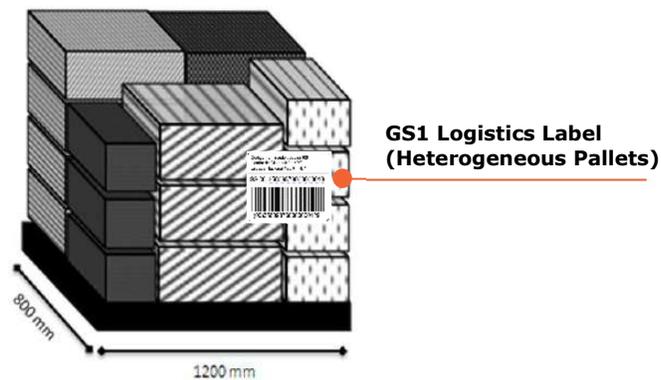


Figure 18. Multiple Destination Heterogeneous Pallets – **Scenario 1.**

5.4.2.2.2. Scenario 2: Several GS1 Logistics Labels– SSCC per columns of products

- 1) For this scenario is recommended the appliance of the GS1 Logistics Label – **Homogeneous Pallets**.
- 2) In the pallet the products should be separated by reference and conditioning in columns. If there are different batches and expiry dates for the same product (in the same pallet), they should be separated per batch and expiry date and conditioning in columns.
- 3) In each product column should carry GS1 Logistics Label – Homogeneous Pallets.
- 4) The products identification information, e.g. GTIN's, batches and expiry dates and the different SSCC's **shall be** encoded in GS1-128 barcodes.
- 5) Information related to products identification, e.g. GTIN's, batch, and expiry dates **can be** provided and sent through EDI (GS1 EANCOM® or GS1 XML®).

! **Note:** In case of use of and EDI shipment advice, the SSCC has to be strictly encoded in an autonomous barcode line.

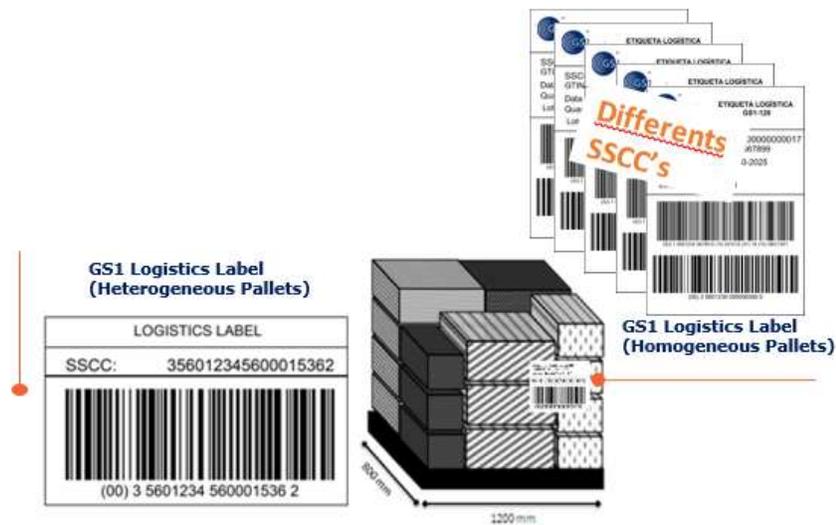


Figure 19. Multiple Destination Heterogeneous Pallets Example – **Scenario 2.**

5.4.2.2.3. Scenario 3: Packing list

- 1) For this scenario is recommended the appliance of a packing list to accompany the multiple destination heterogeneous pallet (see Figure 21. Packing list structure for the multiple destination heterogeneous pallet, page 31).
- 2) Products in the pallet should be separated by reference and conditioning in columns. If there are different batches of the same (in the same pallet), they should also be separated by batch and packed in columns.
- 3) The **packing list** should contain the different SSCC's, and the product information encoded ins GS1-128 barcodes. Each product reference, separated and conditioning in columns, should correspond to each section identified in the packing list (see figure 21. Packing list structure for the multiple destination heterogeneous pallet, page 31).
- 4) The packing list **can** be comprised of one or more A4 sheets, according to the number of products/columns present in the multiple destination heterogeneous pallet.
- 5) It is recommended that packing list have a maximum 8 products references per sheet.
- 6) The sections identified in the packing list should match the columns arrangement in the pallet.
- 7) Information related to products identification, e.g. GTIN's, batch numbers and expiry dates **can be** provided and sent through EDI (GS1 EANCOM® or GS1 XML®) shipment advice note.

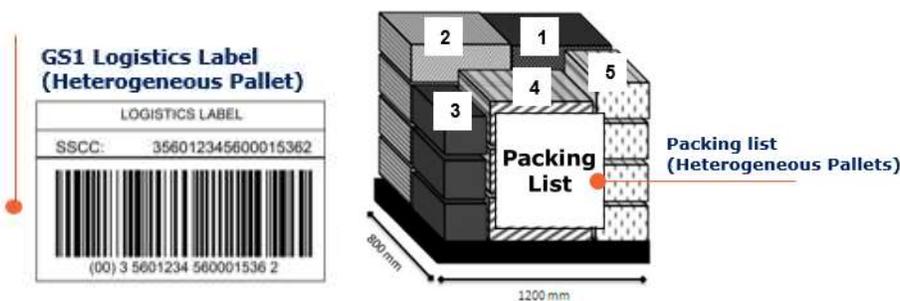


Figure 20. Multiple Destination Heterogeneous Pallet Example – **Scenario 3.**



Figure 21. Packing list structure for the multiple destination heterogeneous pallet– Scenario 3.



Notes:

- Minimum height of GS1-128 barcode lines should be 12mm.
- In case of utilization of shipment advice via EDI the SSCC must strictly coded on an isolated code line separate from the packing list.

5.4.2.2.4. Scenario 4: Individual Case Identification and Barcoding

- 1) For this scenario is recommended the appliance of GS1-128 Logistics Label structure – **Heterogeneous Pallets**.
- 2) The label should contain only the SSCC encoded in the GS1-128 symbology.
- 3) In every boxes should use GS1 Structure for the transport boxes (consult chapter “5.5 transport boxes” page 33).
- 4) Information related to products identification (GTIN’s), batch and expiry dates **should be** encoded in GS1-128 barcode and attached to each product box.
- 5) Information related to products identification, e.g. GTIN’s, batch numbers and expiry dates **shall be** provided and sent through EDI (GS1 EANCOM® or GS1 XML®) shipment advice note.

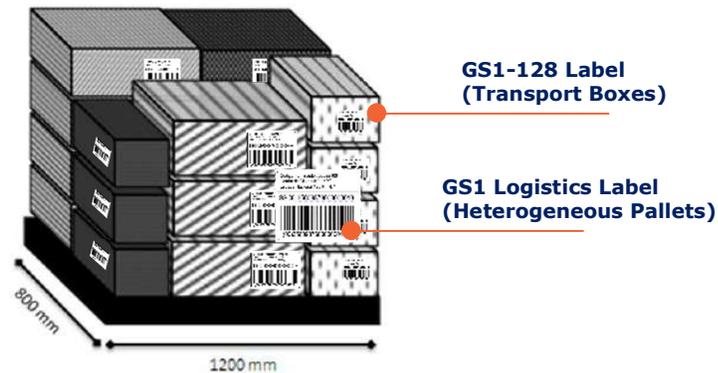


Figure 22. Multiple Destination Heterogeneous Pallets Example - **Scenario 4.**

5.5. Transport Boxes

Logistics Label should be placed on transport boxes whenever there is the need to capture product additional data, e.g. a batch, a expiry date or weight.

The set of data to be encoded and which information is necessary for the traceability purpose may vary from sector to sector (e.g. in the meat, fish and fresh vegetables sectors). These are products that can accounted in fixed measures or weight variable measures in terms of weight or quantity.

All the information's contained in the Logistics Label of the box should be encoded in GS1-128 barcode, and the use of Application Identifiers (AI's) is recommended.

Considering the supply chain specifications are identified three information formats to encode and that tend to cover all the requirements.



Figure 23. Transport Boxes Label without Expiry Date Example



Figure 24. Transport Boxes Label with Expiry Date Example



Figure 25. Example of a label of Transport Boxes of commercialized products with variable measures (net weight in kilograms)

! Notes:

- For more information on dimensions and encoding rules of ITF-14 and GS1-128 barcodes, please consult the document "GS1 General Specifications" (https://gs1pt.org/wp-content/uploads/2022/02/GS1_General_Specifications_v22.pdf)
- The minimum width should be 105mm and the height is variable according to the number of codes lines.
- There are currently more than 150 Application Identifiers developed by GS1 in accordance with the needs of the market. To consult the Application Identifiers list, follow the link: (<https://www.gs1.org/standards/barcodes/application-identifiers/00?lang=>)
- AI's list recommended by the business portuguese sector in the chapter "5.3.2 GS1 Logistic Label mandatory and optional data" page 18.

5.6. Placement of the Logistics Label

The recommendations that follow apply to all logistics units, such as pallets, parcels or boxes. As a rule, for correct transportation and storage, the logistic label with barcode should be placed on at least one of the sides of the logistic unit. However, it is recommended that two logistic label, with the same information and data content, should be placed on two contiguous sides, in the following situations:

- The printing process make it cost effective (e.g. pre-printed corrugated cartons)
- The supply chain requirement is that one symbol is always visible (e.g. the pallets that are stored either longer or short edge facing)

5.6.1. On Pallets

For all types of pallets, including full pallets containing individual trade items and single trade items, (such as a fridge or a dishwashing machine), the recommended height for the placement of the bottom of barcode is between 400 mm and 800 mm from the base of the pallet. For the pallets that are less than 400 mm high, the barcode should be placed as high as possible.

The symbol, including its quit zones, should be at least 50 mm from any vertical edge, to avoid damage to it.

Below is an example of placement of the logistic label on the pallet:

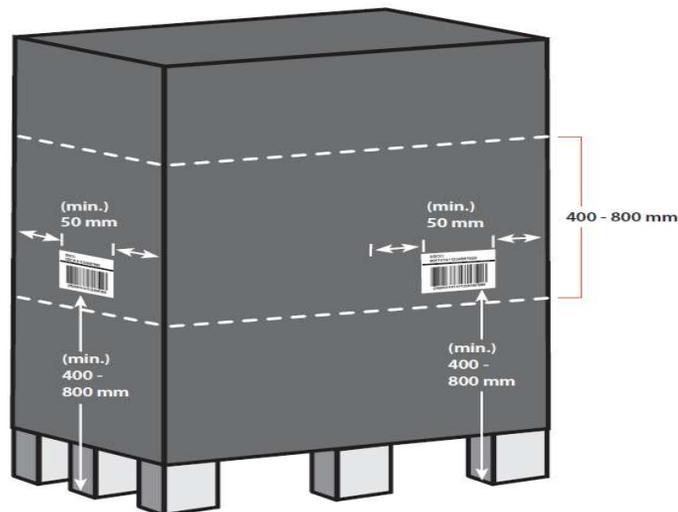


Figure 26. GS1 Logistics Label Placement on Pallets



Note: There is no regulation that specify where the labels should be placed – on the left, in the middle or to the right of the logistic unit – but, as most forklift operators are right-handed, it is more correct from an ergonomic point of view, that the scanning/reading is done when the labels are placed to the right of each side.

5.6.2. On Transport Boxes

On boxes (shipment units), symbol placement may vary slightly. However, the ideal placement for the base of the barcode is 32mm from the natural base of the item. The symbol, including its quiet zones, should be at least 19 mm from any vertical edge, in order to avoid damage to it.

For smaller packages which can be sorted automatically in a conveyor, the label should be placed on the largest surface.

In the following image you can see an example of label placement on the transport box:

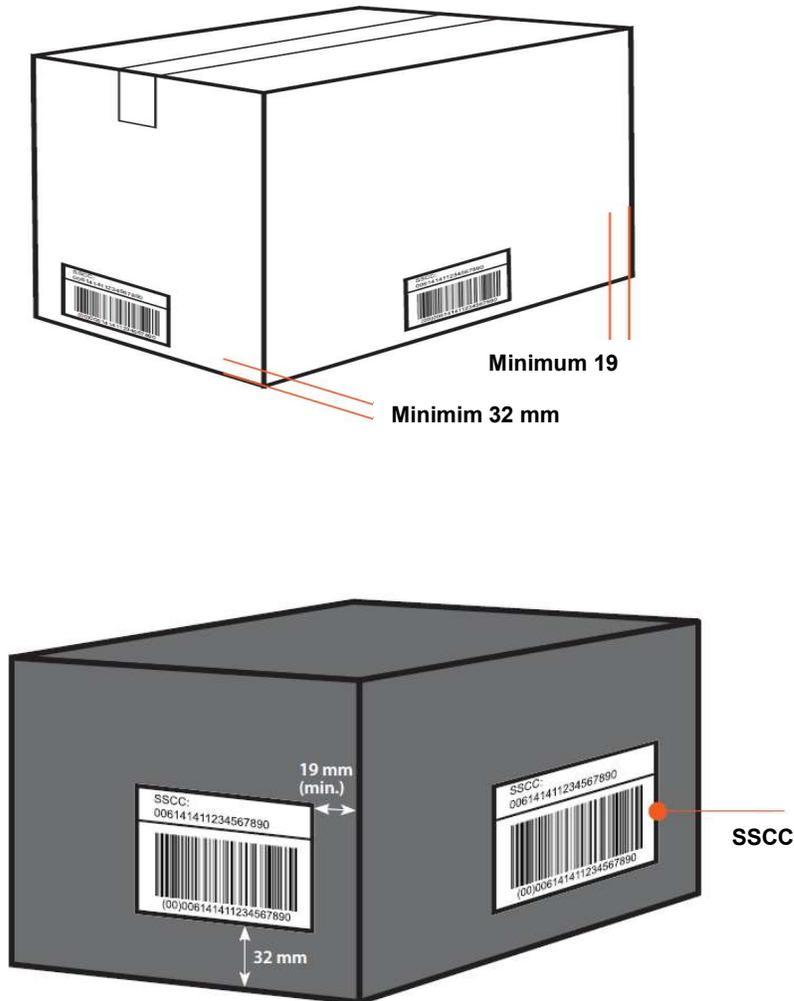


Figure 27. GS1 Logistics Label Placement on Transport Boxes

! **Note:** In case of labelling of transport boxes of a single type of product, the corresponding GTIN is the primary key for the identification and SSCC is not contemplate. The SSCC should be applied only to mixed products boxes.

5.7. Quality Test

To verify if the symbol meets the GS1 System specifications, it shall be tested using the specification defined in Standard ISSO/IEC 15416, which details the conditions under which measurements shall be made. The specifications defined the methods of determining an overall quality grade based on the attributes of the barcode and determining its conformity with the system.

The stages of the test including all the verifications are:

- 1- Check if the barcode has been correctly assembled
- 2- Barcode symbol test to examine the X-dimension, ratio and symbol height
- 3- Label quality after a subject to transport simulation
- 4- Visual control of the layout and information content against the specifications

In some cases, it is recommended to realized tests for different goods handling environments.

In this context it should be stated that the data and the good quality are extremely important. Any faulty data, label or data that cannot be scanned/read is as good as no label and may lead to considerable business problems. There is no relevant legislation on this issue but usually this type of negligence is penalized by the market.



Note: GS1 Portugal performs quality test and provides technical assistance services. Contact GS1 Portugal directly by calling **+351 217 520 740** or consult **www.gs1pt.org**.

6. Appendix 1 – Glossary of Terms

CONCEPT	DEFINITION
An - Alphanumeric	Describes a set of characters that contain alphabetic characters (letters), numeric characters (numbers) and other characters such as punctuation marks.
Application Identifiers (AI's)	The field of two or more characters at the beginning of an Element String that uniquely defines its format and meaning.
Automatic Identification and Data Capture	Abbreviation for Automatic Identification and Data Capture. A technology used to automatically capture data. AIDC technologies include barcode symbols, smart cards, biometrics and RFID.
Batch	The batch or lot number associates an item with information the manufacturer considers relevant for traceability of the trade item. The data may refer to the trade item itself or to items contained.
Carrier	Party undertaking the transportation of goods from one point to another. The party that provides freight transportation services or a physical or electronic mechanism that carries data.
Carrier/Forwarder	The carrier is the entity undertaking the transportation of goods from one point to another. The freight forwarder is the party arranging the carriage of goods including connected services and/or associated formalities on behalf of a shipper or consignee/recipient.
Check Digit	A digit calculated from the other digits of an Element String, used to check that the data has been correctly composed (see GS1 Check Digit Calculation).
Check Digit GS1	A digit calculated using an algorithm (Mod 10). The Control Digit calculation ensures the accuracy of the data.
Concatenation	The representation of several data in one barcode symbol/line.
Consolidation	The grouping together of individual consignments of goods into a combined consignment for carriage.
Consumer Unit	Any item (product or service) presented in a package size agreed by trading partners as the size sold to end customers at the retail point of sale.
Cross – Docking (Individual Heterogeneous Pallets)	Cross docking (Quay to Quay or Flow Through Distribution) is a distribution system, which does not store but prepares the received goods in a distribution centre or in a hub for the immediate reshipment to shops. The preparations per store are done by the supplier and/or retailer. In case of crossdocking for individual heterogeneous pallets (intermediate pallet handling) the preparation of orders is realized at the distribution centre. The logistic units are received, regrouped and redirected by destination together with other products, to be shipped and delivered to the final consumer. In this case, it is the distribution centre that places the logistics labels only if is necessary.
Cross – Docking (Multi Destinations Pallets)	Cross docking (Quay to Quay or Flow Through Distribution) is a distribution system, which does not store but prepares the received goods in a distribution centre or in a hub for the immediate reshipment to shops. The preparations per store are done by the supplier and/or retailer. In case of crossdocking for multi destinations heterogeneous pallets the preparation of logistics units (boxes, pallets, ...) for shops is realized by the supplier. After that, these logistic units are received and stored on the quay of the distribution centre. Then they are regrouped with other logistic units (that arriving from another manufacturer/ supplier) in order to be routed without any further manipulation towards their final shipment point. In this case, it is the supplier that places the logistics labels on the newly regrouped logistic units.
Data Title	Data titles are the abbreviated descriptions of data fields. Are used to support manual interpretation of barcodes.
Despatch Advice	Document by means of which the seller or shipper/consignor informs the recipient/consignee or buyer about the dispatch of goods.
Distribution Centre	A place specially designed for receipt, storage, material handling, reconditioning and shipping of products.
Fast Moving Consumer Goods (FMCG)	Fast Moving Consumer Goods (FMCG), also known as Consumer Packaged Goods (CPG) - products that have a quick turnover, and relatively low cost. Consumers generally put less thought into the purchase of this products than they do for other products. Though the absolute profit made on this products is relatively small, they generally sell in large numbers and so the cumulative profit on such products can be large. Examples of FMCG generally includes a wide range of frequently purchased consumer products such as toiletries, soap, cosmetics, teeth cleaning products, shaving products and detergents, as well as other non-durables such as glassware, bulbs, batteries, paper products and plastic goods. FMCG may also include pharmaceuticals, consumer electronics, packaged food products and drinks, although these are often categorised separately.

CONCEPT	DEFINITION
FNC1 – Symbol Character Function 1	Abbreviation Function Code 1 and is the symbology element that delimits the start and end of variable fields in the code line of the UCC/EAN-128 logistics label. It can also be used to separate certain concatenated data elements, depending on their position in the Barcode symbology.
Function 1 Symbol Character (FNC 1)	A symbology element used to form the double start pattern of a GS1-128 Barcode Symbol. It is also used to separate certain concatenated data fields (Element Strings), dependent on their positioning in the barcode symbol.
Global Location Number (GLN)	The GS1 Identification Key used to identify physical locations or legal entities. The key is comprised of a GS1 Company Prefix, Location Reference and Check Digit.
Global Trade Item Number (GTIN)	Permite a identificação de uma unidade de consumo, que é definida como qualquer item (produto ou serviço) sobre o qual há necessidade de recolher informação pré-definida e que pode ter um preço, ser encomendado ou facturado em qualquer ponto da cadeia de abastecimento. A Global Trade Item Number® pode ser utilizado em estruturas de dados GTIN-8, GTIN-12, GTIN-13 e GTIN-14.
GS1 Company Prefix	Part of the GS1 System identification number consisting of a GS1 Prefix (in Portugal “560”) and a Company Number, both of which are allocated by GS1 Member Organisations.
GS1 General Specifications	Defines the GS1 System data and application standards related to the marking and automatic identification of trade items, locations, logistic units, assets, and more using barcodes, RFID, and GS1 Identification Keys.
GS1 Logistics Label	Um formato normalizado de etiqueta logística, que foi definido pela GS1. Esta etiqueta é recomendada para todas as unidades logísticas.
GS1-128 Barcode Symbology	A subset of the Code 128 that is utilised exclusively for GS1 System data structures.
ISO/IEC 1541	Barcode symbology, Specification, Code 128.
ISO/IEC 15459-1	Unique Identifier for transport unit. Also known as “ISO Licence Plate”.
Logistic unit	Um item de qualquer composição, vocacionado para o transporte e ou armazenagem, que necessita de ser gerido através da cadeia de abastecimento. Pode ser identificada através do SSCC.
Quiet Zone	A clear space containing no machine-readable marks before or after the barcodes, which precedes the Start Character of a barcode symbol and follows the Stop Character.
Receiving Advice	Document by means of which the recipient/consignee or buyer informs the seller or shipper/consignor about the reception of goods.
Recipient	The party by whom the goods, cargo or containers are meant to be received. The actual physical receipt can take place by another party.
Restricted Circulation Numbers (RCN)	Allows the identification of a consumption unit of a sold, ordered or produced products in non-standard quantities. These are consumption units of variable measures, which are characterized by having attributes that can vary in two types: products with variable weight and variable quantities products.
Shipper	The party by whom the goods, cargo or containers are sent. The physical dispatch can be done by another party.
Serial Shipping Container Code (SSCC)	GS1 Identification Key used to identify logistic units. The key uses an 18 digit data structure comprising the Extension Digit, the GS1 Company Prefix, Serial Reference and Check Digit.
Warehouse	A place specially designed for receipt, storage, material handling, reconditioning and shipping of products.
X – dimension	The specified width of the narrowest element in a barcode symbol.

7. Appendix 2 – FAQ

1. Who decide the content of the SSCC?

It is the creator of the logistic unit who allocates the SSCC. The recipient may not impose the structure of the SSCC on the supplier. The SSCC and the GTIN are separated numbering systems, with their own rules for number allocation.

2. Is the extension digit in SSCC always '3'?

No, the extension digit may vary from 0 to 9 and its use is left at the discretion of the company generating logistic labels.

3. Are the brackets present in the GS1-128 barcode?

No, the brackets containing AI's are not present in GS1-128 barcode. The brackets are only used in the human readable text under the barcode to differentiate separate data elements. GS1-128 software recognizes different information based on the standardized AI format.

4. What is an FNC1? What is it used to?

The Function 1 Symbol Character (FNC1) is a symbology element used to form the double start pattern of GS1-128 barcode symbol. It is also used to separate certain concatenated data fields (Element Strings), dependent on their positioning in the barcode symbol.

- Following the Start Character: this double start pattern (start character + FNC1) is reserved for GS1 System applications worldwide. This makes it possible to distinguish GS1-128 barcode symbols from other non-standard symbols. This FNC1 is encoded in the barcode.
- As a separator: all data fields (element strings) that do not have a pre-defined (fixed) length must be followed by an FNC1 separator when followed by another data field (element string) in a single barcode symbol. An FNC1 character is not required at the end of the last data field (element string) represented in a GS1-128 barcode symbol. This FNC1 corresponds to ASCII character 29 (<GS>)

5. Which subset must preferably be used in GS1-128 barcode? A, B ou C?

The Start Character of set C should always be used when the data inclusive of the AI begins with four or more numeric characters. Character set C is preferred as it encodes data with double density. This way, the length of the barcode is optimized. Sets A and B do not have this double density characteristic. Characters sets A and B should only be used when alphanumeric characters are encoded or when at the end of the barcode odd-numbered positions occur. For example, when using character set C and further on in the barcode an alphanumeric character appears, then a change must be made from character set C to A or B. Whether to use of A or B depends on the type of data that follows.

6. Where extra human readable information (non-barcode encoded) should be placed?

Where human readable information is legally required (e.g., dangerous goods, maximum temperature for frozen goods) in some countries the law requires food "NOT FOR HUMAN CONSUMPTION" to be clearly marked as such must follow the local legal requirements. These legal requirements may include font size, the location of the information, the exact wording, etc. Such information is perhaps best suited to a separate informational label. However, if the labeler so wishes, e.g., to avoid the costs of an additional label) and it is in line with legal requirements, the content of the top block (free-format section).

7. Which recommendations regarding affixing the pallet label should be taken into consideration to obtain a maximum readability?

- For film-wrapped pallets, affix the label above the film, not under the film, otherwise reflection will disturb the scanning.
- On pallets containing fresh/frozen products, apply labels that are resistant to humidity.
- On pallets that are stored outside / exposed to bad weather circumstances, apply labels that are resistant to these environments.
- Use a label sticker. If you are obliged to use a label card or a loose paper (e.g. when the pallet is not film wrapped), make sure that it is well affixed to the pallet content.
- Different types of adhesives exist according to the type of surface (cartons, plastic, film...). Before affixing labels, contact your label supplier to receive the appropriate information.

8. What factors influence the choice of A6 or A5 format?

- The amount of data
- Availability of the data
- Scanning/reading environment
- Business requirements
- Unit dimensions
- Processing situation