



The Global Language of Business

Retail Grocery

Implementation Roadmap for GS1-128 Barcodes on Retail Grocery Cases

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Table of Contents

- 1 Introduction 5**
 - 1.1 Scope 5
 - 1.2 The GS1 US Retail Grocery Initiative 5
- 2 Goals 5**
- 3 Implementation Milestones 6**
- 4 Retail Grocery Product Category Breakout 6**
- 5 MILESTONE 1: Create GTINs for cases 7**
 - 5.1 Description 7
 - 5.2 Key Efforts 7
 - 5.3 Documentation Support 7
- 6 MILESTONE 2: Review all data requirements for the label 7**
 - 6.1 Description 7
 - 6.2 Key Efforts 8
 - 6.3 Documentation Support 8
- 7 MILESTONE 3: Share product description data and new attributes with trading partners 9**
 - 7.1 Description 9
 - 7.2 Key Efforts 9
 - 7.3 Documentation Support 9
- 8 MILESTONE 4: Prepare hardware and software for new label/barcode application 9**
 - 8.1 Description 9
 - 8.2 Key Efforts 9
 - 8.3 Documentation Support 10
- 9 MILESTONE 5: Implement case labeling with trading partner pilots (internal/external) 10**
 - 9.1 Description 10
 - 9.2 Key Efforts 10
 - 9.3 Documentation Support 10
- 10 MILESTONE 6: Capture key data elements at pre-determined critical tracking events (CTEs) 11**
 - 10.1 Description 11
 - 10.2 Key Efforts 11
 - 10.3 Documentation Support 11



11 Conclusion..... 12

12 Resources..... 12

Appendix A Critical Tracking Events (CTE) Definitions..... 14

Appendix B Key Data Elements (KDE) Definitions..... 15

Appendix C North American Retail Grocery Case Label Examples 16

 C.1 Meat..... 16

 C.2 Poultry..... 16

 C.3 Produce 17

 C.4 Seafood 17

Appendix D FAQs About Changes 18

 D.1 GS1-128 vs. Code 128..... 18

 D.2 Direct print on corrugate 18

 D.3 Barcode scanner compatibility 18

 D.4 GS1-128 barcode size limitation is 48 characters 18

 D.5 Proper GS1-128 barcode formatting 18

 D.6 Proper barcode size, placement and positioning 18

 D.7 Application Identifier (AI) positioning..... 18

 D.8 Proper GS1 encoding rules on 4-digit Application Identifiers (AIs) 19

About GS1

GS1® is a neutral, not-for-profit, global organization that develops and maintains the most widely-used supply chain standards system in the world. GS1 Standards improve the efficiency, safety, and visibility of supply chains across multiple sectors. With local Member Organizations in over 110 countries, GS1 engages with communities of trading partners, industry organizations, governments, and technology providers to understand and respond to their business needs through the adoption and implementation of global standards. GS1 is driven by over a million user companies, which execute more than six billion transactions daily in 150 countries using GS1 Standards.

About GS1 US

GS1 US®, a member of GS1 global, is a not-for-profit information standards organization that facilitates industry collaboration to help improve supply chain visibility and efficiency through the use of GS1 Standards, the most widely-used supply chain standards system in the world. Nearly 300,000 businesses in 25 industries rely on GS1 US for trading-partner collaboration that optimizes their supply chains, drives cost performance and revenue growth while also enabling regulatory compliance. They achieve these benefits through solutions based on GS1 global unique numbering and identification systems, barcodes, Electronic Product Code (EPC®)-based RFID, data synchronization, and electronic information exchange. GS1 US also manages the United Nations Standard Products and Services Code® (UNSPSC®).

1 Introduction

Organizations doing business in retail grocery and foodservice today are looking to implement case-level traceability to increase information transparency for consumers, optimize supply chain visibility, and streamline business processes. Organizations can leverage their existing investments in GS1 Standards such as Global Trade Item Number® (GTIN®) to support electronic case-level traceability with the use of GS1-128 barcodes. A GS1-128 barcode is a barcode that enables companies to encode GTINs *as well as additional information such as batch/lot numbers, best-by dates, variable weight information and more.*

To promote progress, the Supply Chain Visibility Workgroup of the GS1 US Retail Grocery Initiative has set a goal to increase implementation of GS1-128 barcodes to support case-level electronic traceability. This document provides a roadmap with milestones for achieving this goal, and identifies the key efforts for each milestone. It should be noted that although all GS1 Standards are voluntary (see note below), individual trading partners may require them for their trading relationships.



Important: As with all GS1 Standards and solutions, this implementation roadmap is voluntary, not mandatory. It should be noted that use of the words “must” and “require” throughout this document relate exclusively to technical recommendations for the proper application of the standards to support the integrity of your implementation.

1.1 Scope

This effort is aimed at cases identified with GTINs for traceability, logistics and inventory management purposes. Cases labeled with SSCCs are beyond the scope of this effort.

1.2 The GS1 US Retail Grocery Initiative

The GS1 US Retail Grocery Initiative (Retail Grocery Initiative) is a voluntary and collaborative industry effort seeking to address new challenges with GS1 Standards to further improve product information, supply chain visibility, and operational efficiencies. By bringing together industry stakeholders, the Retail Grocery Initiative is designed to examine specific business process challenges and identify potential solutions using GS1 Standards that would promote continued progress toward greater efficiencies, enhanced risk management, and business growth.

2 Goals

The Supply Chain Visibility Workgroup of the Retail Grocery Initiative has set a goal to increase implementation of GS1-128 barcodes to support case-level electronic traceability. Specifically, the goal is to increase implementation of GS1-128 barcodes in the following areas:

- Suppliers/distributors using GS1-128 barcodes upon receipt and shipments
- Suppliers/distributors storing GS1-128 barcode data (GTIN, Date, Lot/Batch/Serial Number)
- Grocery retailers scanning GS1-128 barcodes on cases upon receipt
- Grocery retailers storing GS1-128 barcode data (GTIN, Date, Lot/Batch/Serial Number)

3 Implementation Milestones


The Supply Chain Visibility Workgroup has identified six milestones for GS1-128 implementation:

1. Create GTINs for cases.
2. Review all data requirements for labels.
3. Share product description data and new attributes with Trading Partners.
4. Prepare software/hardware for new label/barcode application.
5. Implement case labeling with trading partner pilots (internal/external).
6. Capture key data elements at pre-determined critical tracking events.

Key information about each milestone is presented throughout the remainder of this document.

4 Retail Grocery Product Category Breakout

Product Category	Description
Fresh Meat	<ul style="list-style-type: none"> ▪ including poultry
Fresh Produce	<ul style="list-style-type: none"> ▪ bulk and packaged
Fresh Seafood	<ul style="list-style-type: none"> ▪ commodity/bulk
Dairy	<ul style="list-style-type: none"> ▪ fresh/refrigerated (e.g., chilled juices, milk, creamers, eggs, cheese, butter/margarine, sour cream, dips, yogurts, etc.) ▪ refrigerated dough products (e.g., ready-to-prepare rolls, crusts, cookies, potatoes, etc.)
Deli/In-Store Prepared	<ul style="list-style-type: none"> ▪ packaged lunchmeats & cheeses ▪ in-store prepared salads, hot foods, etc. ▪ sliced meats and cheeses created specifically for the deli case
Beverages	<ul style="list-style-type: none"> ▪ fresh chilled (warehouse and direct store delivery (DSD))
Bakery	<ul style="list-style-type: none"> ▪ in-store prepared and commercial
Center of Store	<ul style="list-style-type: none"> ▪ refrigerated ▪ frozen ▪ dry grocery ▪ all other beverages

 **Note:** The table above does not include product categories that are not human food (e.g., pet food, paper goods, cleaners and household supplies, general merchandise, pharmacy, etc.).

5 MILESTONE 1: Create GTINs for cases

Responsible Supply Chain Role(s): Product Owner

5.1 Description

The Global Trade Item Number (GTIN) is the globally unique GS1 Identification Number used to identify “trade items” (i.e., products and services that may be priced, ordered or invoiced at any point in the supply chain). GTINs are assigned by the brand owner of the product, and are used to identify products as they move through the global supply chain. The GTIN uniquely identifies a product at each packaging level (e.g., a box of Brand X cereal; a case of six boxes of Brand X cereal; etc.). Using GTINs can improve product information, operational efficiencies, and supply chain visibility. (To learn more about GTINs, consult an [Introduction to the Global Trade Item Number \(GTIN\)](#).)

5.2 Key Efforts

- Follow the [GS1 US Getting Started Roadmap](#) to help you:
 - Acquire a GS1 Company Prefix from GS1 US
 - Determine GTIN capacity – how many different products require unique identification
 - Submit application for a GS1 Company Prefix license
- Create your GTINs
- Identify what you need to do internally to build GTINs and prepare for GTIN/barcode applications
- Determine GTIN and product description governance strategy

5.3 Documentation Support

- [GS1 US Getting Started Roadmap](#)
- [Introduction to the Global Trade Item Number \(GTIN\)](#)
- [GS1 GTIN Management Standard](#)
- [GS1 Fruit & Vegetable GTIN Assignment Implementation Guideline](#)
- [Produce Traceability Initiative Practices for Preparing to Assign GTINs](#)

6 MILESTONE 2: Review all data requirements for the label

Responsible Supply Chain Role(s): Product Owner

6.1 Description

The consumer packaged goods industry has traditionally used the information printed on case-level labels to facilitate the distribution of goods from manufacturer through the supply chain to retail stores or foodservice operators. This information has been provided using both human-readable text and machine-readable barcodes.

The GS1-128 barcode is designed to include additional data using Application Identifiers (AIs) and is limited to a maximum of 48 characters. Given these inherent character limitations, it is important for trading partners to review all GS1 data requirements for a label, and determine what information should be encoded in the GS1-128 barcode versus what information could be printed in plain-text on the case

label. Companies will need to consider internal strategies as well as any trading partner and/or regulatory requirements. Companies are strongly encouraged to follow industry standards.

! **Important:** Each company is individually responsible for meeting all statutory and/or regulatory requirements for their company and their products. Consult with your company's legal counsel or compliance team (regulatory or quality) for more specific information about statutory and regulatory requirements.

6.2 Key Efforts

Please see the [North American Industry Guidance for Standard Case Code Labelling](#) for specific guidance on case-labeling information and format requirements for the implementation of GS1-128 barcodes.

- Identify trading partner and/or regulatory requirements for the product categories
- Evaluate the use of batch/lot numbers or serial numbers
- Define your internal management strategy for batch/lot or serial number assignment
- Label Design by product category:
 - Align GTIN with batch/lot number and dates for encoding in the barcode
 - Evaluate plain-text content to be printed on the label:
 - Description of product
 - Country of Origin
 - Additional attributes
 - Attribute format types per regulatory or trading partner requirements
- Review process for product creation and labeling:
 - Align GTIN strategy with master data management
 - Align GTIN assignment with master data
 - Align data requirements for labels with master data
 - Establish ownership within organization for data to be applied to the label
 - Master Data Management
 - Operations
 - IT

6.3 Documentation Support

- [North American Industry Guidance for Standard Case Code Labelling](#)
- [North American Retail Grocery Labelling examples](#) (in the appendix of this document)
- [Produce Traceability Initiative Best Practices for Formatting Case Labels](#)
- [GS1 Traceability for Fresh Fruits and Vegetables Implementation Guide](#)
- [GS1 US Traceability guidelines:](#)
 - [Traceability for Seafood: U.S. Implementation Guide](#)
 - [Traceability for Meat & Poultry: U.S. Implementation Guide](#)
 - [Traceability for Dairy, Deli & Bakery: U.S. Implementation Guide](#)

7 MILESTONE 3: Share product description data and new attributes with trading partners

Responsible Supply Chain Role(s): All participants

7.1 Description

Companies whose item master lists or databases (commonly referred to in the industry as an “item master”) use “free form” product descriptions are encouraged to replace those descriptions with standardized formats based on established attribute definitions. Once the more efficient formats are completed, it is important to share this data with your trading partners as a step to a common understanding of product descriptions and as notification that case labels are changing.

7.2 Key Efforts

- Notify colleagues internally about product identification (GTINs) and product description data
- Notify colleagues internally about label and barcode changes
- Notify trading partners about new GTIN assignments, product data descriptions, and new barcode application with the reasons as supported by the initiative

7.3 Documentation Support

- [*GDSN Retail Grocery Attributes Interactive Spreadsheet Tool \(GDSN v3.1\)*](#)
- [*North American Industry Guidance for Standard Case Code Labelling*](#)
- [*Retail Grocery Labelling examples \(in the appendix\)*](#)
- [*Fruit & Vegetable GDSN Trade Item - Implementation Guideline*](#)
- [*Produce Traceability Initiative Best Practices Data Synchronization \(March 2012\)*](#)

8 MILESTONE 4: Prepare hardware and software for new label/barcode application

Which Supply Chain Role(s): All participants

8.1 Description

Companies will need to review current production and packaging process, hardware and software, and define implementation plans for the new data requirements and new processes for barcode application and data capture.

8.2 Key Efforts

- Review current production and packaging process
- Review current software/hardware
- Evaluate current and new barcode scanning capabilities and uses
- Develop implementation plans:
 - Review resources (cost and availability)

- When and where will this happen
- Internal training for success
- Identify [critical tracking events \(CTE\)](#) and data storage ([key data elements \(KDE\)](#)) for data sharing (mock recall practice)
- Develop key performance indicators (KPI)

8.3 Documentation Support

- [GS1 US Solution Partner Program](#)
- [North American Industry Guidance for Standard Case Code Labelling](#)
- [GS1 General Specifications](#)

9 MILESTONE 5: Implement case labeling with trading partner pilots (internal/external)

Which Supply Chain Role(s): All participants

9.1 Description

Companies should conduct both internal and external pilot tests to minimize disruption and maximize the opportunity for a successful implementation while working on implementation steps for new case labels.

9.2 Key Efforts

- Application of labels (i.e., how are we going to apply the labels?)
 - What facility?
 - What process?
- Test/Validate label
- Data Interpretation from scanning
- Capture barcoded data at pre-determined critical tracking events
- Capture use of data in the barcodes to support KPIs
- Mock recall internally/externally

9.3 Documentation Support

- [Industry Roadmap](#)
- [GS1 US Solution Provider Finder](#)
- [FAQs About Changes](#) (in the appendix of this document)
- [Produce Traceability Initiative Guidance for Sharing Trace-Back Data](#)
- [GS1 US Test/Verify Barcodes](#)

10 MILESTONE 6: Capture key data elements at pre-determined critical tracking events (CTEs)

Which Supply Chain Role(s): All participants

10.1 Description

Implementing traceability across a supply chain relies on distribution channel participants collecting, recording, storing, and sharing minimum pieces of information for traceability. Traceability information should be collected/recorded during key business steps known as [Critical Tracking Events \(CTEs\)](#). This supports the “one up/one down” principle of tracing a product’s movement through the supply chain, and promotes preparedness for fast and precise recalls, consumer protection, and brand protection. The traceability data to be collected/recorded for each Critical Tracking Event (CTEs) are known as [Key Data Elements \(KDEs\)](#). KDEs provide essential information about time and place of the event, the party reporting the event, and the identification of the product involved. In addition, KDEs include related essential information about the transformation, transportation, or depletion of a traceable product.

To date, industry members have captured CTE/KDE using paper documents (e.g., packing slip, invoice, purchase order, etc.), PDFs of those documents, spreadsheets, etc. However, such approaches to data capture/recording can be problematic as they are often proprietary solutions that are not necessarily interoperable or compatible, or in a format that lends itself to seamless sharing and processing among trading partners for traceability.

GS1 Electronic Product Code Information Services (EPCIS) is another approach to capturing and sharing CTE/KDE. EPCIS is a standards-based electronic data capture mechanism that can be used by trading partners to capture, record, and share CTE and KDE. Unlike paper documents, PDFs, and spreadsheet, EPCIS offers a standardized format (i.e., XML message) and data standards that enable seamless sharing and processing among trading partners. The EPCIS is a flexible standard that can be leveraged for a wide variety of business needs. There are numerous options for how the standard can be implemented (e.g., event types, data elements, data values) in order to accommodate different applications and environments. Fortunately – the groundwork for an EPCIS application for food traceability has already been laid in the work to develop the CTE and KDE:

- CTE = foundation for identifying which EPCIS Events need to be captured
- KDE = foundation for identifying which CBV data elements should be captured for each event

10.2 Key Efforts

- Collect/record KDE about inbound and outbound product for each CTE via EPCIS
- Share physical event data for traceability via EPCIS

10.3 Documentation Support

- [GS1 US Traceability guidelines:](#)
 - [Traceability for Seafood: U.S. Implementation Guide](#)
 - [Traceability for Meat & Poultry: U.S. Implementation Guide](#)
 - [Traceability for Dairy, Deli & Bakery: U.S. Implementation Guide](#)
- [GS1 US Case Studies](#)
- [Produce Traceability Initiative Guidance for Sharing Trace-Back Data](#)
- [EPCIS and CBV Implementation Guideline](#)

11 Conclusion

This document provides a roadmap for implementing GS1-128 barcodes to support electronic case-level traceability. GS1-128 is a barcode that can encode GTINs as well as additional information such as batch/lot numbers, dates, variable weight information, and more. In addition, this document describes the use of GS1 EPCIS to capture, record, and share CTE and KDE. Unlike paper documents, PDFs, and spreadsheet, EPCIS offers a standardized format (i.e., XML message) and data standards that enable seamless sharing and processing of CTE/KDE among trading partners to support electronic case-level traceability. This application of GS1-128 barcodes and EPCIS enables organizations doing business in retail grocery to leverage their existing investments in GS1 Standards to support electronic case-level traceability.

Beyond traceability, marking cases with a GS1-128 barcode that encodes the product GTIN with additional information can have valuable benefits for retail grocery stakeholders. As a result, this application offers several opportunities for internal return on investment based on operational efficiencies and streamlined business processes including:

- improved recall precision,
- optimized and successful order fulfillment, and
- improved quality management of date-sensitive products.

12 Resources

- [GS1 US Getting Started Roadmap](#)
- [Introduction to the Global Trade Item Number \(GTIN\)](#)
- [GS1 GTIN Management Standard](#)
- [GS1 Fruit & Vegetable GTIN Assignment Implementation Guideline](#)
- [Produce Traceability Initiative Practices for Preparing to Assign GTINs](#)
- [North American Industry Guidance for Standard Case Code Labelling](#)
- [Produce Traceability Initiative Best Practices for Formatting Case Labels](#)
- [GS1 Traceability for Fresh Fruits and Vegetables Implementation Guide](#)
- [GS1 US Traceability guidelines:](#)
 - [Traceability for Seafood: U.S. Implementation Guide](#)
 - [Traceability for Meat & Poultry: U.S. Implementation Guide](#)
 - [Traceability for Dairy, Deli & Bakery: U.S. Implementation Guide](#)
- [GDSN Retail Grocery and Foodservice Attributes Interactive Spreadsheet Tool \(GDSN v3.1\)](#)
- [Fruit & Vegetable GDSN Trade Item - Implementation Guideline](#)
- [Produce Traceability Initiative Best Practices Data Synchronization \(March 2012\)](#)
- [GS1 General Specifications](#)
- [GS1 US Solution Provider Finder](#)
- [Produce Traceability Initiative Best Practices for Formatting Case Labels](#)
- [Test/Verify Barcodes](#)
- [GS1 US Case Studies](#)
- [Produce Traceability Initiative Guidance for Sharing Trace-Back Data](#)



- [Fresh Foods Management Solution](#)
- [EPCIS and CBV Implementation Guideline](#)

Appendix A Critical Tracking Events (CTE) Definitions

Event Type	CTE	Description
TRANSFORMATION EVENTS <i>events that typically support internal traceability within the four walls of a supply chain company</i>	TRANSFORMATION INPUT	An event where one or more materials are used to produce a traceable product that enters the supply chain. (NOTE: Materials used to produce products for immediate consumption by consumers are reported as Consumption events.)
	TRANSFORMATION OUTPUT	An event where a created traceable product is packaged and labeled for entry into the supply chain.
TRANSPORTATION EVENTS <i>events that typically support external traceability between supply chain companies</i>	SHIPPING	An event where traceable product is dispatched from a defined location to another defined location.
	RECEIVING	An event where traceable product is received at a defined location from another defined location.
DEPLETION EVENTS <i>events that capture how traceable product is removed from the supply chain</i>	CONSUMPTION	An event where a traceable product becomes available to consumers (Point-of-Sale or Prepared).
	DISPOSAL	An event where a traceable product is destroyed or discarded or otherwise handled in a manner that the product can no longer be used as a food ingredient or become available to consumers.

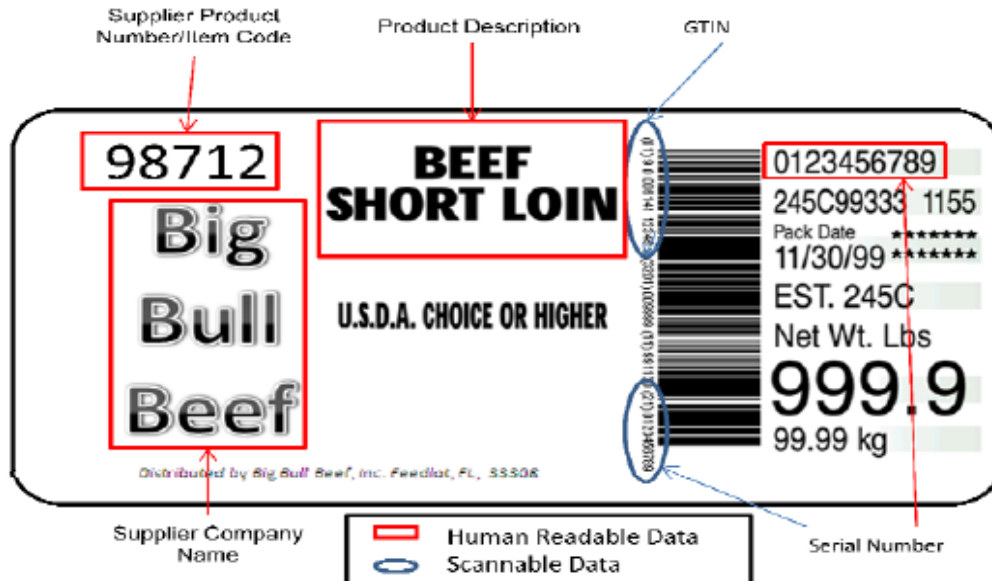
Appendix B Key Data Elements (KDE) Definitions

The table below lists the minimum traceability information (KDE) that trading partners need to capture about cases for each CTE:

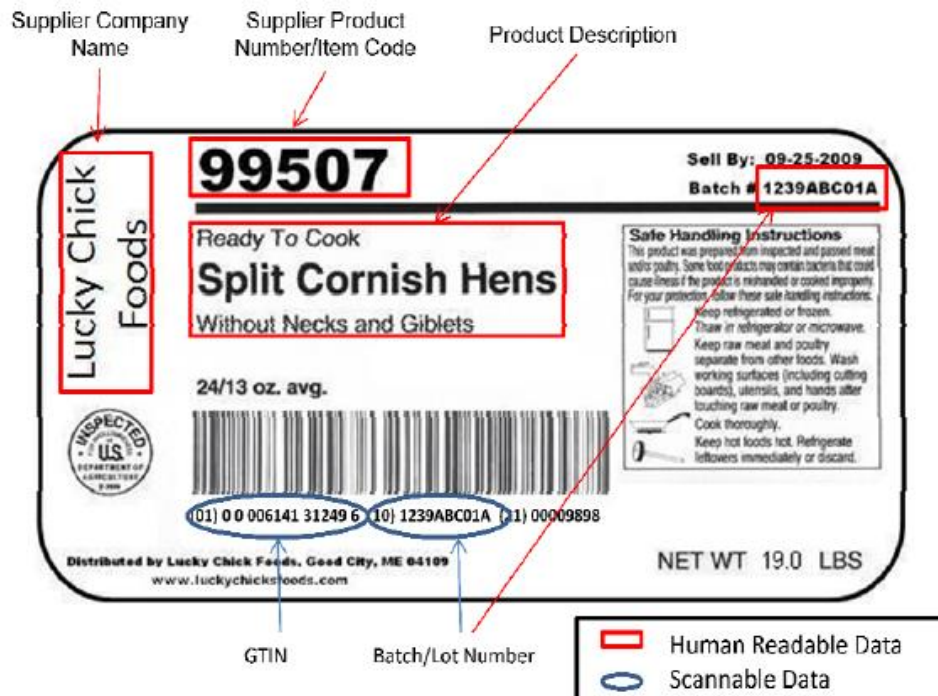
KDE	Description
Event Location	The Event Location is the location where the event occurs (e.g., facility, plant, warehouse, building, production line, loading dock door, etc.). The preferred identification is the GS1 Global Location Number (GLN).
Data Owner	The Data Owner is the identification of the party that observed and is reporting the event and the party that should be consulted if trading partners or government authorities need more information about the event. The preferred identification is the GS1 Global Location Number for that party's corporate or regional office location.
Trading Partner	The location identification of the trading partner of the "recipient" party for a CTE. For instance in a shipping CTE it would be the location of the person that will receive the product being shipped. For a transformation input CTE it would be the supplier identification of the Item ID. The preferred identification is the GS1 Global Location Number.
Activity Type	Activity Type describes the document used to identify the CTE or business process being met.
Activity Number	The Activity Number is the identification number of the Activity Type document used to uniquely identify a segment of production for a transformation event or a set of products shipped for a transportation event. For example, in a transformation event, the Activity ID ties the identity of the input products with the corresponding output products. For transportation activities, the Activity ID may be a purchase order number or a bill of lading number that as a reference number identifies the set of products shipped and received.
Date/Time of data capture	The Event Date is the calendar day at the event location (formatted as an ISO 8601 Date standard YYYYMMDD) and Event Time is the time formatted in Greenwich Mean Time when an event is completed. When an event activity is performed over an extended period, the ending time should be reported for transformation type events, and the starting time should be reported for depletion type events. Transportation type events should be the approximate time the transportation unit departed or arrived. In the event of a product transformation, it is the date and time when the input product identified is last added to the transformation event or the date and time when the output product identified is last produced.
GTIN(s)	The reference value that identifies the traceable product's essential product and packaging characteristics (product specification, type of meat cut, level of processing, level of cooking, and packaging, etc.). The preferred identification is the Global Trade Item Number. For all events, the use of the GTIN as the item identifier is strongly encouraged, as it is globally unique and denotes both the supplier and product.
Lot/Batch Number or Serial Number	A unique coded identifier assigned by the product supplier that unites products that have undergone combination, transformation, packaging, or manipulation under a common set of circumstances such as time, production crew, or ingredient lot. If more than one batch, lot (the terms batch and lot as defined here are used interchangeably), or serial number is involved in the event, a separate event is reported for each along with the quantity of product marked with each batch/lot or serial number. The Batch/Lot or Serial Number has value only when used in conjunction with the Item Identification element value.
Product Date	Production Date, Sell By, Expiration Date, etc.
Quantity	The Quantity is a numeric value that indicates the amount of product involved in the event.
Unit of Measure (UOM)	The Unit of Measure is the designation that indicates the measurement unit associated with the Quantity reported for the event.

Appendix C North American Retail Grocery Case Label Examples

C.1 Meat



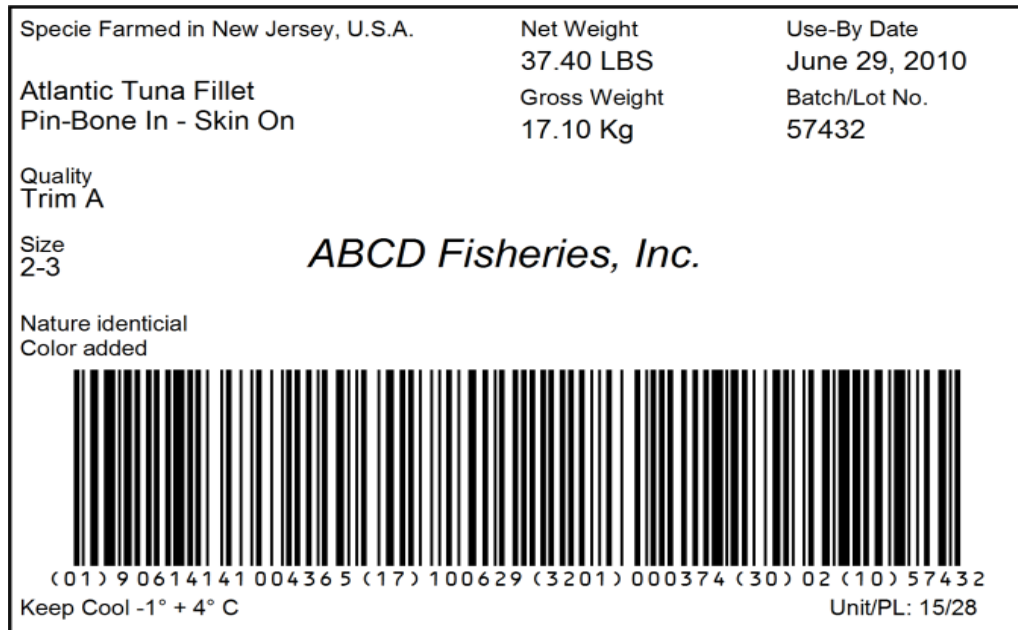
C.2 Poultry



C.3 Produce



C.4 Seafood



Appendix D FAQs About Changes

Common Mistakes on GS1-128 Barcode Implementation

D.1 GS1-128 vs. Code 128

Analyzing the differences between a GS1-128 and Code 128 Barcodes. The GS1-128 is a **subset** of the Code 128 barcode. Although the barcodes may look the same, you must ensure that it utilizes the special character (Function Code 1 or FNC1 character) at the beginning of the data string along with the proper GS1 Primary Identifier, such as a Global Trade Item Number (GTIN). You can consult with your barcode production software manufacturer on how to implement the Function Code 1 character.

D.2 Direct print on corrugate

Printing a GS1-128 barcode directly on craft (brown corrugate) does not deliver the same performance as an ITF-14 barcode. There are different print quality grades differentiating between the GS1-128 and ITF-14, therefore a GS1-128 may not scan accurately if directly printed on this type of corrugate. Please see Best Practices on Barcode Printing Directly on Corrugate Cases in the "Tools and Resources" section of this document.

D.3 Barcode scanner compatibility

Some barcode scanners may not be able to "read" the GS1-128 barcode because the functionality is not activated. Consult with your scanner manufacturer in order to "turn-on" the capability of scanning a GS1-128 barcode. There is no need to purchase a new scanner/imager.

D.4 GS1-128 barcode size limitation is 48 characters

Be careful not to exceed the 48 character limit within a GS1-128 barcode. The character limitation includes the Application Identifiers and specific data elements (e.g., if only a GTIN was encoded in the GS1-128 barcode, the total character count would be 16 (2 for the AI (01) and 14 for the GTIN itself).) Consult with your trading partner's GS1-128 barcoding requirements in addition to the Industry Guidelines noted above in the "Education" section.

D.5 Proper GS1-128 barcode formatting

The GS1 Application Identifiers are displayed in parenthesis e.g., AI (10) in the human readable information below the barcode. However, the parentheses are not to be encoded within the barcode, and the data packet/message should not have any parentheses within it.

D.6 Proper barcode size, placement and positioning

There are standards for proper barcode placement on cases (e.g., proper placement is having a barcode on 2-adjacent sides of the case, 1.25" from the bottom of the base of the case and 0.75" away from the vertical edge of the case). See Section 6.7 of the [GS1 General Specifications](#) for the full details on placement.

D.7 Application Identifier (AI) positioning

When creating a GS1-128 barcode, best practice is to encode the Application Identifiers (AIs) in the following order:

- First encode the GS1 Identifier, GTIN AI (01)

- Next encode any fixed length Application Identifiers (e.g., Pack Date AI (13) or Sell-By Date AI (15))
- Last encode any variable length Application Identifiers (e.g., Batch/Lot Number, AI (10) or Serial Number, AI (21))

These AIs are used as examples and following the best practice can ensure proper barcode encoding. Please note the Function Code 1 (FNC1) character is also used to separate multiple variable length AIs and must be encoded within the barcode. Therefore, if you chose to encode a Batch/Lot Number **AND** a Serial Number, the Function Code 1 is needed to separate the two. This is needed for all variable length AIs. For more information on Application Identifiers, please see Section 3 of the [GS1 General Specifications](#).

D.8 Proper GS1 encoding rules on 4-digit Application Identifiers (AIs)

Some of the 4-digit AIs have a 4th position for encoding that is reserved for an implied decimal point position and cause confusion in the supply chain if not properly followed. For example, for the AI on Net Weight in Pounds can drastically alter the stored value based on the decimal point position. If the Net Weight was AI (3200) and the value contained is 000400, then the value is stored as 400 LBS., but if the AI is AI (3202) and the same value is contained, 000400, then the value is stored as 4 LBS. The rules are highlighted in Section 3 of the [GS1 General Specifications](#).



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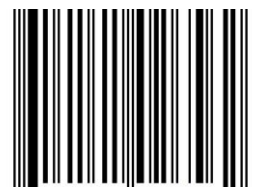
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