

Produce Traceability Initiative Guidance on Benefits of Advance Ship Notice versus Hybrid Pallet Labels

(Revision 1.0)

About this Guidance Document

Guidelines are generally accepted, informally standardized techniques, methods or processes that have proven themselves over time to accomplish given tasks. The idea is that with proper processes, checks and testing, a desired outcome can be delivered more effectively with fewer problems and unforeseen complications. In addition, a guideline can evolve to become better as improvements are discovered. The Produce Traceability Initiative (PTI) is a voluntary U.S. produce initiative. The guidelines are the recommendations created and agreed to by all facets of the produce industry supply chain and the PTI Leadership Council.

Consent between trading partners may replace specific recommendations as long as the minimum traceability information requirements are met in good faith.

Revision History

This section itemizes the changes from the last published Guidance Document.

Version No.	Date of Change	Changed By	Summary of Change
1.0	November 2013	Created by Buyers Working Group	Original Guidance Document

Objectives

The goals of the Guidance on Benefits of Advance Ship Notice (ASN) versus Hybrid Pallet Labels (HPL) are to:

- identify and document the benefits of using the Electronic Data Interchange (EDI) ASN for the transmission of PTI traceability information versus using the Hybrid Pallet Label
- identify requirements for the successful use of ASNs; and,
- identify when to use the Hybrid Pallet Label versus case scanning when ASNs are not available

Introduction

The preferred method to transmit PTI information is the Electronic Data Interchange (EDI) Advance Ship Notice (ASN) transaction. The Hybrid Pallet Label was created as an interim option by which the produce industry could identify contents of a pallet until the electronic communications option could be implemented. Both methods facilitate the capture and storage of PTI traceability information (the Global Trade Item Number[®] or GTIN[®] and Batch/Lot Number) into a receiver's systems. ASN is an electronic method of capturing traceability information and the Hybrid Pallet Label requires manual scanning and capture of the traceability information.

The PTI focuses on standardized, electronic tracking at the case level, rather than item level. The term "case" applies to the physical enclosure in which product is shipped and can be the form of a box, reusable plastic container (RPC), bin, bag, tote, etc. These cases are normally shipped on pallets.

What is an ASN?

The Electronic Data Interchange (EDI) Advance Ship Notice/Manifest or ASN provides order and shipment information in one electronic transaction sent from the supplier to the receiver. While the ASN is similar to a Bill of Lading (BOL) and even carries much of the same information, it has a much different function. The BOL is meant to accompany a shipment along its path. An ASN is intended to provide its information in advance of the actual shipment arriving at its destination.

The ASN is most successful when received prior to the actual shipment. This tends to impact the logistics stream in three areas: cost, accuracy, and flexibility.

- **Cost** - Today's receiving systems are designed as fast moving environments where there is little time to open and break down pallets for manual receipt or verification of contents against paperwork. Instead, these systems depend on scanning barcodes on the shipping labels. ASNs, which include Serial Shipping Container Codes (SSCCs), provide a list of the identification numbers, which are encoded in barcodes on each individual case. This speeds the process as the reads can be matched to the files. The ASN provides quantities and contents allowing the ability to plan the receipt and put-away of the goods. Receiving costs are thought to be reduced by about 40%.*
- **Accuracy** - Upon receipt of the ASN, the receiver is immediately informed of any difference between what was expected, and what has actually been shipped. GTINs being shipped can be validated for exceptions prior to shipment arrival.

*An Analysis of ASN Benchmarks and Best Practices

- **Flexibility** - Knowing the actual fill rates of the orders gives the recipient the opportunity to re-allocate goods in subsequent shipments.

What information is contained in an ASN?

Specific details about a shipment are contained in the ASN message, including:

- Serial Shipping Container Code (SSCC)
- Global Trade Item Number (GTIN) of trade items contained in a logistic unit
- Batch/Lot Number
- Count of trade item (number of cases) contained in a logistic unit
- Order information
- Physical characteristics
- Product descriptions, and
- Carrier

There are many data elements, which can be included in an ASN. The actual elements exchanged will be determined by agreement between the two trading partners.

What is a Hybrid Pallet Label?

The Hybrid Pallet Label is the interim means by which the produce industry is identifying contents of a pallet and is intended to support the industry as it moves toward implementing an electronic method of capturing traceability information, including the use of the ASN. It encompasses both the standard GS1 Serial Shipping Container Code (SSCC) and GS1-128 case barcodes that include:

- Global Trade Item Number (GTIN) of trade items contained in a logistic unit indicated by Application Identifier (AI) (02)
 - *Note: AI (02) is used on a Hybrid Pallet Label to indicate the GTIN of contained trade items, while AI (01) is used on the case label to indicate GTIN. For more information about GS1 Application Identifiers, including mandatory associated AIs and invalid pairs of AIs, please refer to Section 4.11 of the GS1 General Specifications.*
- Batch/Lot Number, AI (10); and
- Count of trade item (number of cases) contained in a logistic unit, AI (37) of each unique composition of cases on the pallet.

Serial Shipping Container Code (SSCC)

The SSCC provides every pallet with a unique identifier that can be linked to the contents of a pallet (Global Trade Item Number, Batch/Lot Number, Count of each GTIN with the same

Batch/Lot Number combination) and communicated electronically. Thus, all cases on the pallet can be identified by scanning the GS1-128 barcodes on a label affixed to the pallet without breaking down the pallet and scanning each case label, while also facilitating the use of the Advance Ship Notice (ASN).

Table 1: Cross-Referenced Terms/Definitions

Listed below are terms used by the produce industry and their cross-references with the GS1 Glossary of Terms:

Sector Term	GS1 Glossary Term	Definition
	Advance Ship Notice (ASN)	An Advance Ship Notice (ASN) is a notification of pending deliveries, similar to a packing list. In electronic form, an ASN is an Electronic Data Interchange (EDI) transaction that provides the receiving company with advance data on shipments to better plan workloads and receipt processing.
	Application Identifier (AI)	The field of two or more digits at the beginning of an element string in an identifier that uniquely identifies the format and meaning of that element string within the GS1 System of Standards.
GTIN	AI (01)	For use on case labels, the Application Identifier (01) indicates that the data field following the AI contains the Global Trade Item Number (GTIN) of a trade item contained in a logistic unit.
GTIN	AI (02)	For use on Hybrid Pallet Labels, the Application Identifier (02) indicates that the data field following the AI contains the Global Trade Item Number (GTIN) of a trade item contained in a logistic unit.
LOT	AI (10)	The Application Identifier (10) indicates that data field following the AI contains a batch or lot number. The batch or lot number associates an item with information the manufacturer considers relevant for traceability of the trade item to which the element string is applied. The AI is variable length and encodes a maximum of 20 characters.
QUANTITY	AI (37)	The Application Identifier (37) indicates that the data field following the AI contains the Count of Trade Items contained in the logistic unit.
	Global Trade Item Number (GTIN)	The globally unique GS1 System identification number for products and services. A Global Trade Item Number (GTIN) may be 8, 12, 13, or 14 digits in length. The GTIN-14 has been selected for use in the Produce Traceability Initiative (PTI) for case level identification.

Sector Term	GS1 Glossary Term	Definition
	GS1	The not-for-profit, neutral organization dedicated to facilitating the adoption and implementation of global standards for the improvement of supply and demand chains. GS1 is dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility of supply and demand chains globally and across sectors. The GS1 System of Standards is the most widely used supply chain standards system in the world.
	GS1-128 Barcode	A subset of Code 128 that is utilized exclusively for GS1 System element strings. Gs1-128 symbols have a special start code pattern (consisting of a Start Character in the first symbol character position followed by the Function Code 1 in the second character position) to designate the data that follows will comply with GS1 System of Standards.
	Hybrid Pallet Label	Encompasses both the standard Serial Shipping Container Code (SSCC) encoded in a GS1-128 barcode and the case-level GS1-128 barcodes, that include Global Trade Item Number (GTIN) of Contained Trade Items indicated by AI (02); Batch/Lot Number indicated by AI (10); and Count of each trade item (number of cases) indicated by AI (37) of each unique composition of cases on the pallet.
Pallet, Non-Standard Mixed Case	Logistics Unit	An item of any composition established for transport and/or storage that needs to be managed through the supply chain.
	Quiet Zones	Clear space void of any marks surrounding a barcode symbol.
	RPC	Acronym for Reusable Plastic Container.
	Serial Shipping Container Code (SSCC)	The globally unique GS1 System identification number used for logistics units, such as pallets, cases, and cartons. The SSCC, an 18-digit number, acts as a "license plate" to efficiently move products from one trading partner to another.
Pallet	Unit Load	One or more transport packages or other items contained on a platform making them suitable for transport, stacking, and storage as a unit.
<p>NOTE: There are other GS1 Application Identifiers available within the GS1 System which can also be utilized within the GS1-128 barcode. For a full list of the GS1 Application Identifiers, please see Section 3.0 of the <i>GS1 General Specifications</i> available on www.gs1us.org. There are rules for concatenating any GS1 Application Identifier and they are covered in Section 4.11 of the <i>GS1 General Specifications</i>, highlighting mandatory associated AIs and invalid pairs of AIs.</p>		

Shippers' Benefits of ASN versus the Hybrid Pallet Label

ASN	Hybrid Pallet Label (HPL)
SSCC encoded into a GS1-128 barcode can be created and applied at start of pallet building process	HPL can only be printed and applied after pallet build is complete
Pallet labels which include SSCC encoded into a GS1-128 barcode can be pre-printed	HPL cannot be pre-printed
No delay at time of loading trailer or truck	Pallet loading delayed while HPL is created and applied to pallet prior to loading
Pallet labels which include SSCC encoded into a GS1-128 barcode is smaller and less expensive than the HPL	HPL is larger and requires multiple labels dependent on number of GTIN and Batch/Lot Number combinations

Receivers' Benefits of ASN versus the Hybrid Pallet Label

ASN	Hybrid Pallet Label
One scan per pallet at time of receiving to confirm receipt	Requires one scan for every GTIN and Batch/Lot Number combination
Receiving and put-away can be pre-planned i.e. cross docking, pre-allocation of inventory, space allocation, resource scheduling	Does not support pre-planning of receiving and put-away
Ensures accuracy between product shipped and product received	Does not provide electronic confirmation between product shipped and received
Allows for pre-receipt validation of incoming GTINs	GTINs can only be validated at time of receiving
Facilitates the integration of data to multiple systems without multiple data entry	Provides no advance notification of expected shipment data
Electronically links the SSCC for the pallet to the GTIN and Batch/Lot Number to purchase order product line	Manual links of received pallets GTIN and Batch/Lot Number to purchase order product line
Single label results in less chance of labels being unscannable or missing	Multiple labels with multiple barcodes have higher risk of being unscannable or missing
Streamlines invoice payment process by facilitating accurate matching as data synchronization is a prerequisite for ASN	Does not require full data synchronization
Error correction process is simplified with ASNs for missing SSCCs	Error correction process is to scan all cases on pallet

ASN Usage:

1. What technology is required to complete ASNs?
 - Electronic Data Interchange or EDI is usually available as an additional service for ERP software systems or can be purchased separately to integrate into other systems. Software available for PC- or server-based systems can be very cost effective. Another alternative is outsourced EDI solutions provided by EDI “Service Bureaus.” However, like all software applications, depending on applications and implementation scope, integrated software packages or programs costs can vary.
 - Ideally, EDI systems should integrate into business software to prevent having to enter data between systems manually. The benefit of EDI is the computer-to-computer exchange of data, eliminating the manual labor.
 - Shippers should be able to “pack to order” and have barcode labels on each shipping pallet. This means the warehouse system allows a shipment to be built and labeled with a Serial Shipping Container Code (SSCC), which is encoded into a GS1-128 barcode. These labels follow specific formats and must contain accurate information; one format is the PTI Hybrid Pallet Label.
 - Use of the SSCC for pallet identification allows for the scanning of one barcode per pallet, and eliminates the need for scanning multiple barcodes per pallet in the receiving process.
 - The labels are pivotal to establishing an electronic relationship between a shipment, its contents, a purchase order, and the internal systems. Each pallet’s GS1-128 barcode label is contained in the ASN document and details all of the products contained in that shipment. ASNs send the information that can allow a system to store and organize purchase order numbers, shipment-related information, and products in the order. When a recipient scans a pallet’s barcode (and reads an SSCC), the information can be electronically matched to the EDI 856 ASN file transmitted previously and downloaded into the receiver’s system.
2. What operational processes are necessary to provide ASNs?
 - An ASN is to notify receivers in advance what will be arriving and when, so the receiver can be prepared to receive the shipment. This means warehouse operations must be precise enough to identify contents by product and quantity on

pallets down to the SKU or product-code level (GTIN). It must be known how many of which products are on each pallet of an order, and how many of those pallets are in each shipment of an order.

- Typically, this process includes staging an order for shipment, creating a freight manifest, and a carrier closeout (getting a shipment assigned and loaded on a truck).
3. What shipping processes are necessary to ensure ASNs are transmitted to arrive in advance of the shipment?
- ASN data will be useful to receivers only if sent in a timely manner and receivers can depend on data to be reliable and accurate.
 - Typical equipment needed to accept, collect, and transmit ASN data includes scanning equipment, label printers, and warehouse software modules that integrate with other company application software. A high degree of software integration is required to be able to gather information, transmit it internally, create shipping/receiving documents, and send it to receivers before shipments arrive.
 - Trading partners establish mutually agreed upon systems or processes ahead of time to address shipping/receiving errors. This will ensure the receiver will benefit with time and cost savings—reducing cycle times and improving in-stock rates—by separating the administrative processes from the logistics processes.

Hybrid Pallet Label Usage

If shippers are not utilizing ASNs with SSCCs encoded in GS1-128 barcodes on pallet labels, it is recommended they validate with their customers if the Hybrid Pallet Label will be scanned at time of receiving and therefore required.

Scanning the Hybrid Pallet Label versus Cases at Time of Receiving

1. When receiving pallets with a Hybrid Pallet Label, scan the barcode(s) on the upper portion of the Hybrid Pallet Label when the pallet will be put away without any cases being removed or added to the pallet.

2. If the inbound product is required to be restacked onto separate pallets per item or cases removed from the pallet, the individual cases should then be scanned once they are placed on their separate pallets.

Note:

The following documents were used as reference material:

- PTI - Why and How to Use EDI 856 Advance Ship Notice/Manifest Transaction
- PTI - Best Practices for Formatting Hybrid Pallets Labels
- PTI - Best Practice for Use of Hybrid Pallet Labels by Receivers