



Kitting

GS1 Standards Implementation Recommendations for the Hardware Sector

Version 1.0

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Acknowledgements

This document guideline for the Australian Hardware Industry was developed by the Hardware GS1 Action Group special Task Group for the use within the Hardware Sector

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1 Purpose

The purpose of this document is to provide organisations trading in the Hardware Sector recommendations on how to apply the GS1 Standards to kits and their components. The document provides recommendations relating to numbering and bar coding, data synchronisation and eCommerce relating to all levels of products in a kit.

2 Background

Within the Hardware Sector there are some trade items that can be sold in a kit form, e.g. Toilet Suites, Outdoor Furniture Settings, BBQ's, Tool sets, Bathroom sets, etc. Whilst various GS1 standard solutions exist, implementation of solutions has been met with software and system limitations resulting in less than ideal management of kits and their components in the supply chain.

The management of Kits throughout the whole supply chain, from manufacture, assembly, storage, distribution, ordering, receipting and final sale impacts all parts of the GS1 System – Numbering & Bar Coding, eMessaging and Data Synchronisation. This paper looks at providing recommendations for the management of kits and their components at the most basic level within a supply chain and provides a framework in which to work.

2.1 Kit Definition:

Kits (Combinations of Independent Items each with a Separate GTIN)

- A kit can be defined as any combination of items that form a standard and stable grouping that can be individually priced or ordered or invoiced. The brand owner is responsible for GTIN allocation. When a kit contains items from multiple manufacturers the GTIN requirements for the kit are the responsibility of the organisation that creates the kit. A typical example of a kit in hardware is a grouping of items as part of a starter paint kit, or a BBQ that comes in three separate packages.

2.2 Types of Kits

For the purposes of this document, Kits have been grouped into two major types:

- Type 1: Multipacks
- Type 2: Set-packs – more than one component individually packaged

2.2.1 Type 1: Multipacks

Multipacks Definition: This is a group of trade items (either the same or different) that is intended to be sold as a single consumer unit. Each different multipack of the same trade item must have a different GTIN assigned.

e.g. Paint Brush Kit – comprised of a Brush, Roller and Paint Tray.

Figure 1: Examples of different Multipacks



2.2.2 Type 2: Set-packs – more than one component individually packaged

Set-packs – This is a standard assortment of trade items. The setpack itself is assigned a unique GTIN and is scannable¹ at the Point-of-Sale by the retailer. Each different item within the setpack has a unique GTIN and is scannable at the Point-of-Sale and may or may not be orderable separately outside of the setpack.

Components of this product may or may not be sold as separate items at POS. Components making up the Kit may be part of several configurations with each configuration having its own unique GTIN.

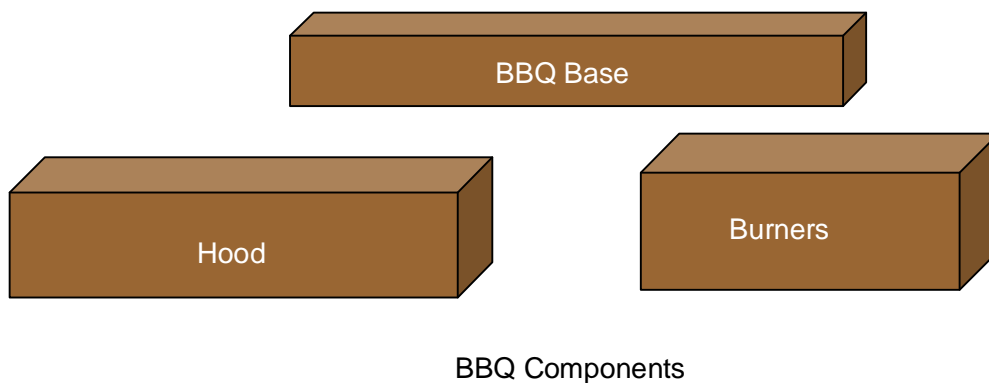


Figure 2: Example of BBQ

¹ A Bar Code for the setpack may be printed by the store to assist with the sale at Point-of-Sale.

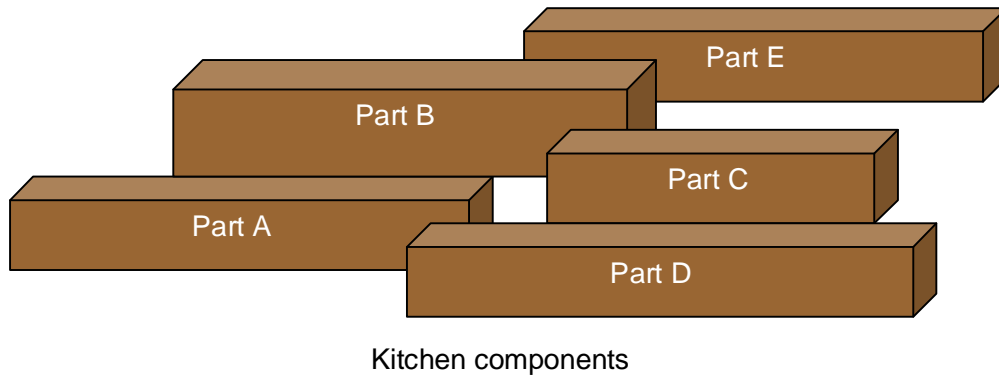


Figure 3: Example of an assembled Kitchen

3 Recommendations

The recommendations provided below have been split into two sections:

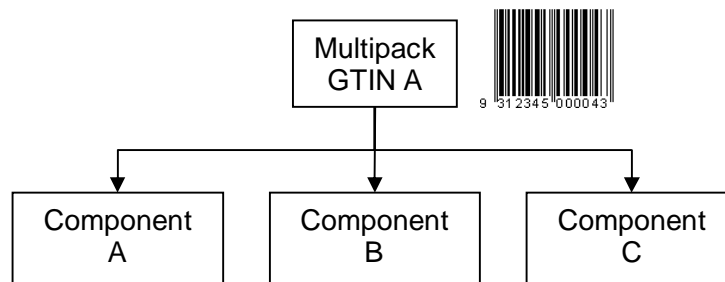
1. Multipacks
2. Set-packs

The recommendations provide guidelines on how to number and bar code kits and their components (where required), the key fields required for electronic data synchronisation and for electronic commerce. In addition to the recommendations, data modelling examples have also been provided.

3.1 Multipacks

3.1.1 Multipack Recommendations

Example Multipack Hierarchy



3.1.1.1.1 Numbering & Bar Coding Recommendations

- Kits to be assigned their own unique Global Trade Item Number (GTIN)
- The Kit GTIN to be referred to as the Parent GTIN
- The Kit GTIN (GTIN-13 or GTIN-12) to be represented in an EAN-13 or UPC-A Bar Code respectively
- Where individual components are physically bar coded, suppliers must ensure that any bar codes identifying the individual components are obscured if placed together as one unit.
- Component (trade item) GTIN optional
- The component (trade item) GTIN (where applicable) to be referred to as a Child GTIN
- If the components that make up the kit can be sold individually each component must be allocated a unique GTIN.

3.1.1.1.2 Data Synchronisation Requirements

- Only the parent GTIN information is required
- Component information NOT required (only provide in a separate hierarchy if component can be sold separately)
- Pricing information supplied for parent GTIN only
- Trade Item Hierarchy level = MULTIPACK

Summary of key GS1net field requirements

GTIN	Trade Item Hierarchy Level	Is Trade Item the lowest level of the Hierarchy	Is Trade Item a Consumer Unit?	Is Trade Item a Despatch Unit?	Is Trade Item an Invoice Unit?	Is Trade Item an Orderable Unit	Child GTIN	Child Quantity	Net Content	Net Content UOM
GTIN A	Multipack	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA

3.1.1.1.3 eCommerce recommendations

- Purchase Order to reference the parent GTIN only
- Component information not required in Purchase Order
- Invoicing against the Ordered GTIN (parent GTIN)
- Receipting completed against the parent GTIN

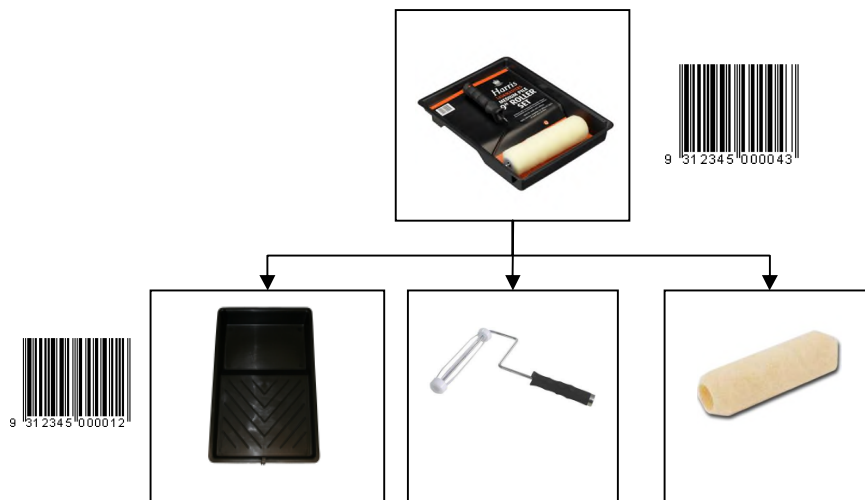
3.1.1.1.4 Other Considerations

- Inventory management at parent GTIN level
- The Multipack components not to be sold separately

3.1.2 Multipack data modelling scenario

The following scenario provides an example of how a Multipack can be modelled using the GS1 System.

Example: Paint Roller Kit



3.1.2.1.1 Numbering & Bar Coding

The combination of a Paint Roller Kit could be represented as:

9312345000043 = 9312345000012 + Roller + Roller Handle

Where:

Paint Roller Kit	=	9312345000043
Paint Tray	=	9312345000012 (Optional)
Roller	=	No GTIN assigned
Roller Handle	=	No GTIN assigned

3.1.2.1.2 Data Synchronisation

GTIN	Trade Item Hierarchy Level	Is Trade Item the lowest level of the Hierarchy	Is Trade Item a Consumer Unit?	Is Trade Item a Despatch Unit?	Is Trade Item an Invoice Unit?	Is Trade Item an Orderable Unit	Child GTIN	Child Quantity	Net Content	Net Content UOM
9312345000043	Multipack	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA

3.1.2.1.3 eCommerce

- Purchase Order to quote GTIN **9312345000043**
- Component information not required in Purchase Order
- Invoicing against the Ordered GTIN **9312345000043**

3.1.2.1.4 Other Considerations

The table below provides an overview of how the kit is managed within the physical supply chain.

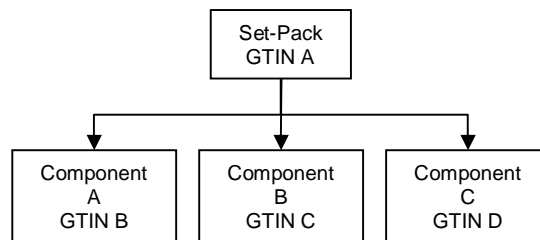
	Product Physically Barcoded?	Purchase Order	Invoice	Goods Receipt (DC)	Store Order	Pick & Despatch	Store Receipt	Point of Sale
Multipack								
Kit (Parent) GTIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Component (Child) GTIN	Optional	No	No	No	No	No	No	No

3.2 Set-packs – more than one component individually packaged

3.2.1 Set-pack Recommendations

3.2.1.1 Scenario 1: Components not for separate sale

Example of a Set-Pack



3.2.1.1.1 Numbering & Bar Coding Recommendations

- Kits to be assigned their own unique GTIN-13
- The Kit GTIN to be referred to as the parent GTIN
- The Kit may not be physically barcoded with the parent GTIN
- All components (trade items) that make up a Kit to be assigned a unique GTIN-13, regardless of whether the component (trade item) can be sold separately or not
- The component (trade item) GTINs to be referred to as a Child GTIN
- All components to be physically barcoded with their corresponding GTIN

3.2.1.1.2 Data Synchronisation Requirements

- Parent GTIN information to be provided
- Component (Child GTIN) information provided
- Pricing information supplied for parent GTIN only
- Trade Item Hierarchy level for Parent GTIN = SETPACK
- Trade Item Hierarchy level for Child GTIN = BASE_UNIT_OR_EACH

Summary of Key GS1net Field requirements for Set-Pack – Individual items not for separate sale

GTIN	Trade Item Hierarchy Level	Is Trade Item the lowest level of the Hierarchy	Is Trade Item a Consumer Unit?	Is Trade Item a Despatch Unit?	Is Trade Item an Invoice Unit?	Is Trade Item an Orderable Unit	Child GTIN	Child Quantity	Net Content	Net Content UOM
GTIN A	SETPACK	No	Yes	Yes	Yes	Yes	GTIN B, GTIN C & GTIN D	1 1 1	3	UN
GTIN B	BASE_UNIT_OR_EACH	Yes	Yes	Yes	No	No	N/A	N/A	1	EA
GTIN C	BASE_UNIT_OR_EACH	Yes	Yes	Yes	No	No	N/A	N/A	1	EA
GTIN D	BASE_UNIT_OR_EACH	Yes	Yes	Yes	No	No	N/A	N/A	1	EA

3.2.1.1.3 eCommerce Recommendation

- Purchase Order may contain both parent GTIN and child GTINs (sub-lining)
- Invoicing against the Ordered GTIN

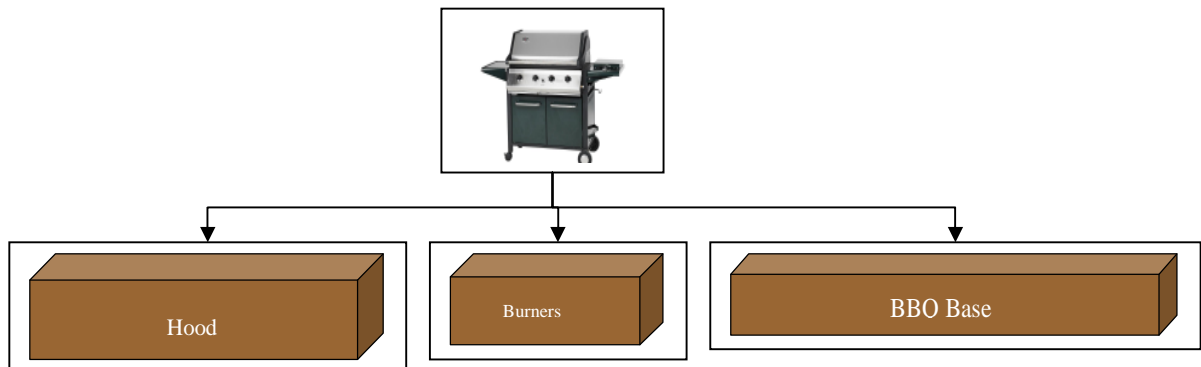
3.2.1.1.4 Other Considerations

- Inventory management at either parent or child GTIN level
- POS and Inventory Management Systems will require the ability to link parent and children GTINs comprising a Set-pack
- Price at POS will only display if all components scanned (transaction complete) ensuring that all items have been selected by the consumer
- Labelling – Components should be clearly marked indicating the number of components making up the kit and the component number e.g. 1 of 3, 2 of 3, 3 of 3

3.2.2 Set Pack Data Modelling example

3.2.2.1 Scenario 1:

Example: 4 Burner BBQ



3.2.2.1.1 Numbering & Bar Coding

The 4 Burner BBQ Kit could be represented as:

9312345000043 = 9312345000012 + 9312345000029 + 9312345000036

Where:	BBQ 4 Burner Kit	=	9312345000043
	BBQ Hood	=	9312345000012
	BBQ Burners	=	9312345000029
	BBQ 4 Burner Base	=	9312345000036

3.2.2.1.2 Data Synchronisation

- Parent GTIN information to be provided
- Component (child GTIN) information provided
- Pricing information supplied for parent GTIN only
- Trade Item Hierarchy level for Parent GTIN = SETPACK
- Trade Item Hierarchy level for Child GTIN = BASE_UNIT_OR_EACH

Summary of Key GS1net Field requirements for Set-Pack – Individual items not for separate sale

GTIN	Trade Item Hierarchy Level	Is Trade Item the lowest level of the Hierarchy	Is Trade Item a Consumer Unit?	Is Trade Item a Despatch Unit?	Is Trade Item an Invoice Unit?	Is Trade Item an Orderable Unit	Child GTIN	Child Quantity	Net Content	Net Content UOM
9312345000043	SETPACK	No	Yes	Yes	Yes	Yes	GTIN B, GTIN C GTIN D	1 1 1	3	UN
9312345000012	BASE_UNIT_OR_EACH	Yes	Yes	Yes	No	No	N/A	N/A	1	EA
9312345000029	BASE_UNIT_OR_EACH	Yes	Yes	Yes	No	No	N/A	N/A	1	EA
9312345000036	BASE_UNIT_OR_EACH	Yes	Yes	Yes	No	No	N/A	N/A	1	EA

3.2.2.1.3 eCommerce

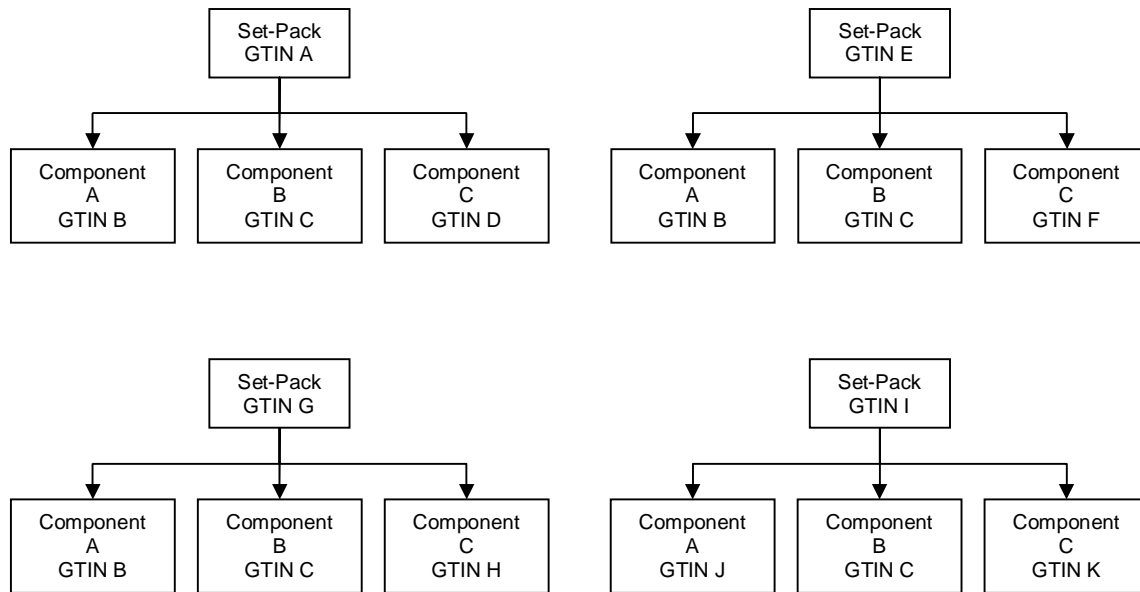
- Purchase Order to contain the parent GTIN and child GTINs (sub-lining)
- Invoicing against the Ordered GTIN

3.2.2.1.4 Other Considerations

- Inventory management at parent GTIN level

3.2.2.2 Scenario 2: Items can be sold separately or be part of multiple kits

Example: Set-Packs



3.2.2.2.1 Numbering & Bar Coding Recommendations

- All components (trade items) that make up a Kit to be assigned a unique GTIN-13
- Each Set-Pack (Kit) to be assigned its own unique GTIN-13
- The Set-Pack (Kit) GTIN to be referred to as the parent GTIN
- The component (trade item) GTIN to be referred to as a child GTIN
- Each component to be physically bar coded

3.2.2.2.2 Data Synchronisation

- Parent GTIN information to be provided
- Component (child GTIN) information provided
- Pricing information supplied for parent GTIN and component GTINs (where appropriate)
- Trade Item Hierarchy level for Parent GTIN = SETPACK
- Trade Item Hierarchy level for Child GTIN = BASE_UNIT_OR_EACH

Summary of Key GS1net Field requirements for Set-Pack – Individual items not for separate sale

GTIN	Trade Item Hierarchy Level	Is Trade Item the lowest level of the Hierarchy	Is Trade Item a Consumer Unit?	Is Trade Item a Despatch Unit?	Is Trade Item an Invoice Unit?	Is Trade Item an Orderable Unit	Child GTIN	Child Quantity	Net Content	Net Content UOM
GTIN A	SETPACK	No	Yes	Yes	Yes	Yes	GTIN B GTIN C GTIN D	1 1 1	3	UN
GTIN E	SETPACK	No	Yes	Yes	Yes	Yes	GTIN B GTIN C GTIN F	1 1 1	3	UN
GTIN G	SETPACK	No	Yes	Yes	Yes	Yes	GTIN B GTIN C GTIN H	1 1 1	3	UN
GTIN I	SETPACK	No	Yes	Yes	Yes	Yes	GTIN J GTIN C GTIN K	1 1 1	3	UN
GTIN B	BASE_UNIT_OR_EACH	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA
GTIN C	BASE_UNIT_OR_EACH	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA
GTIN D	BASE_UNIT_OR_EACH	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA
GTIN F	BASE_UNIT_OR_EACH	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA
GTIN H	BASE_UNIT_OR_EACH	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA
GTIN J	BASE_UNIT_OR_EACH	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA
GTIN K	BASE_UNIT_OR_EACH	Yes	Yes	Yes	Yes	Yes	N/A	N/A	1	EA

3.2.2.2.3 eCommerce

- Purchase Order may contain the parent GTIN and component GTINs
- Customers may order the components separately
- Components may belong to more than one Kit (combination)
- Invoicing against the Ordered GTIN

3.2.2.2.4 Other Considerations

Inventory management at Component GTIN level

	Product Physically Barcoded?	Purchase Order	Invoice	Goods Receipt	Store Order	Pick & Despatch	Store Receipt	Point of Sale
Set-Pack – components not for separate sale								
Kit (parent) GTIN	No ²	Yes	Yes	No	Yes	No	No	Optional
Component (child) GTIN	Yes	Optional		Yes	No	Yes	Yes	Yes
Set-Pack – components can be sold separately								
Kit (parent)	No ³	Yes	Yes	No	Yes	No	No	No

² A Bar Code for the setpack may be printed by the store to assist with the sale at Point-of-Sale.

³ A Bar Code for the setpack may be printed by the store to assist with the sale at Point-of-Sale.

GTIN								
Component (child) GTIN	Yes	Optional	Yes	Yes	Yes	Yes	Yes	Yes

3.3 Managing Kits transported in multiple components

In some instances the trade item, the kit, is sold as a complete unit but transported in its components not necessarily all at the same time. In this instance trading partners will need to confirm between them the best method of tracking all component parts to ensure that the complete set is ultimately delivered.

One method of doing this would be to identify (via the GTINs allocated) that the combination of all component GTINs is equivalent to the GTIN assigned to the entire kit. In this case upon receipt of the goods, the retailer can scan the individual components and flag that only two of the three parts has been received. Once all components, in this example the third, are received the system updates the receipt of a complete kit.

For example:

The combination of a White Toilet Suite could be represented as:

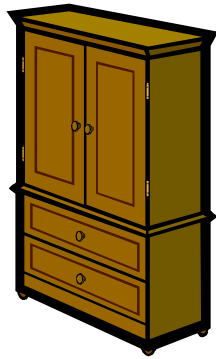
$$9312345000043 = 9312345000012 + 9312345000029 + 9312345000036$$

Where:

- White Toilet Suite = **9312345000043**
- White Plastic Seat = 9312345000012
- White Bowl = 9312345000029
- White Cistern = 9312345000036

Upon either scanning the GTIN comprising of the suite (provided separately or referenced on a logistics label) or referencing the appropriate Purchase Order, the system may request that the operator scan for each of the individual components to complete the receipt of the goods. Should one or more components be missing then this is flagged accordingly as an incomplete order.

3.4 Alternative Scenario for managing Set-packs – individual items not for separate sale



Various kits sold at Point of Sale may be composed of several physical components where the components are not sold through Point-of-Sale to the end consumer. E.g. Customer pays for goods at front counter, but collects items via warehouse/store customer pickup location.

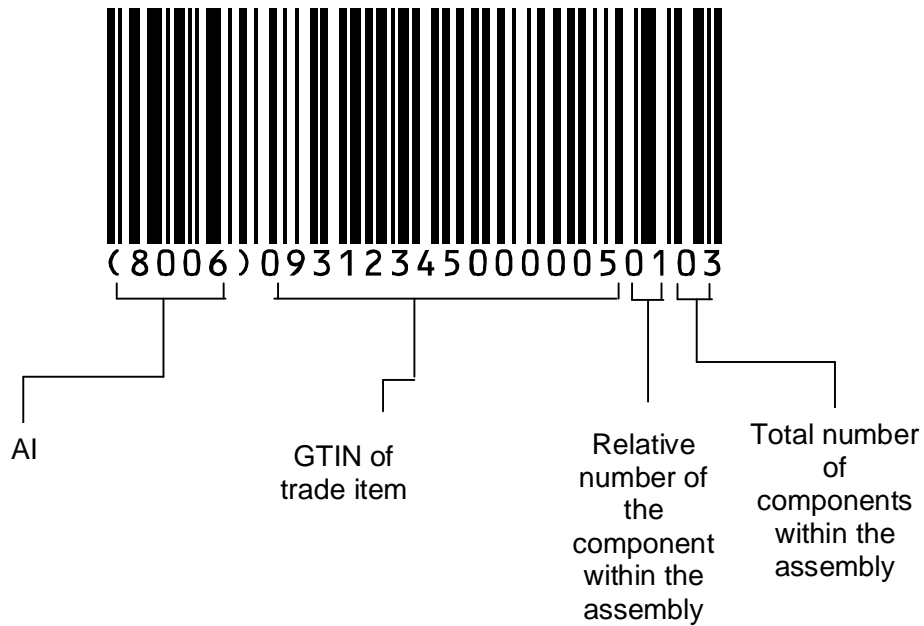
Note: Consultation with your trading partners is essential if the use of this particular application is required as not all trading partners may yet be able to cater for this application.

To assist in shipping and receiving applications the Application Identifier AI(8006), which identifies the components of a trade item, may be used. AI (8006) identifies a parcel (component), which is part of an item identified with a GTIN. This AI is marked on each individual physical unit that makes up the retail unit. In shipping or receiving applications, it ensures that all components of the same retail unit are present.

When using AI(8006) the following elements are required:

- AI (8006) (four digits)
- GTIN-14 identification of the whole item (fourteen digits)
- relative number of the component within the assembly (two digits)
- total number of components in the assembly (two digits)

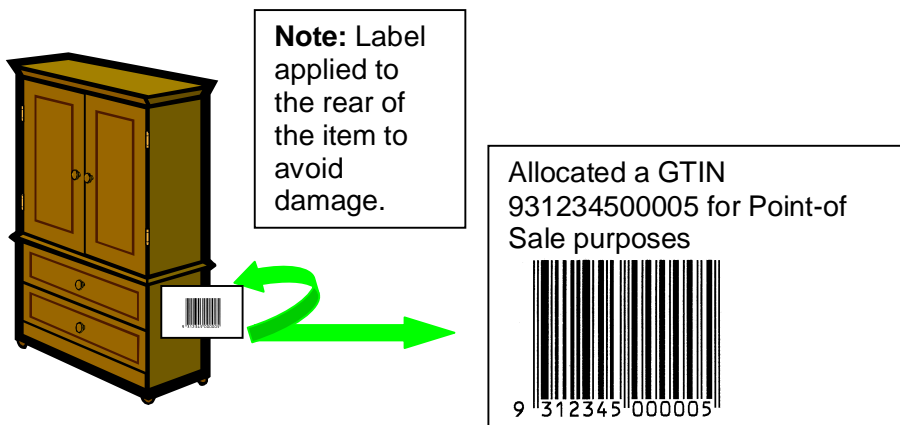
Note: This AI should NEVER be used on retail units, which may be sold separately at Point-of-Sale.



Component of a Trade Item

For example:

A cabinet is sold with shelves as one single unit however when distributed it comes in multiple packages. To ensure all packages are received the following displays the use of the component of a trade item.

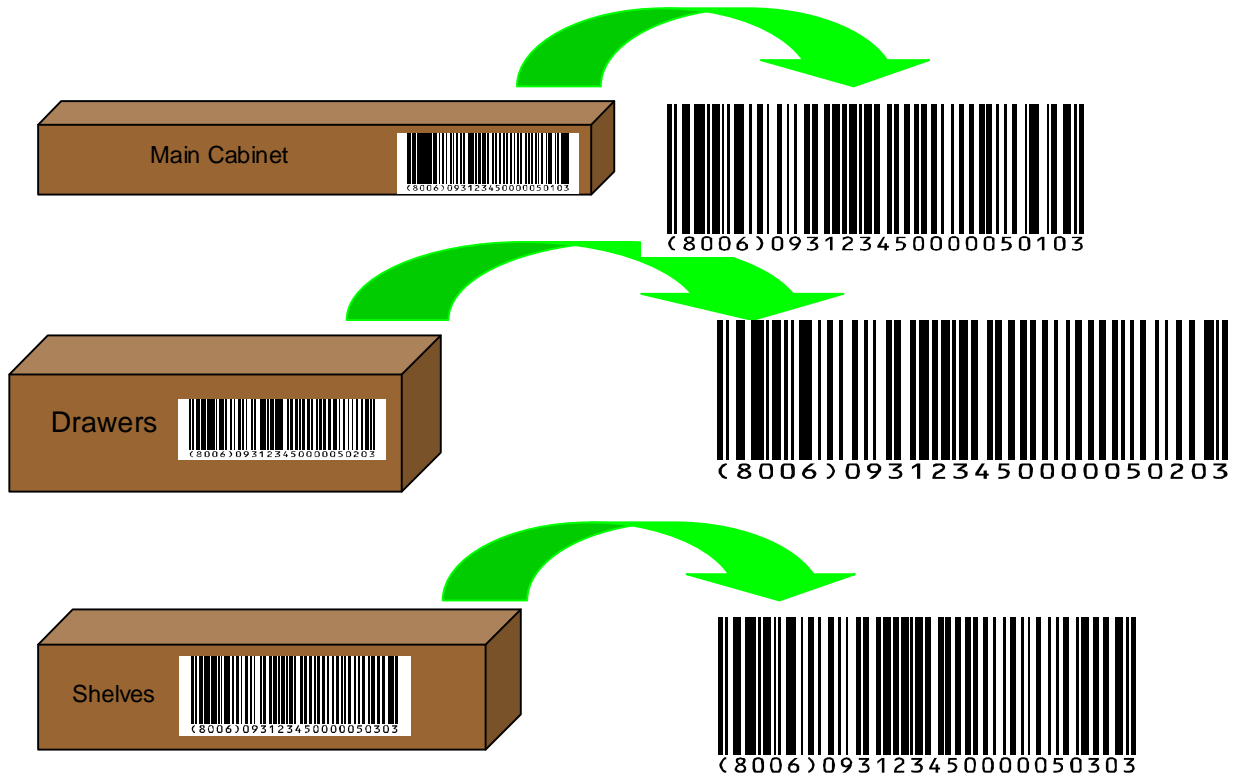


Application of component of an item

The cabinet is then shipped in three packages:

- package one contains the main section of the unit
- package two contains the two drawers
- package three contains the shelves

Thus each unit would be marked as follows:



4 GS1 Standards

For details on how to manage the creation of a GTIN-13 and GTIN-14 and printing of bar codes, please refer to the following links:

http://www.gs1au.org/information_library/technical_fact_sheets.asp

5 Definitions

The following definitions have been sourced from existing GS1 documentation e.g. Global Data Definitions document.

MULTIPACK – This is a group of trade items (either the same or different) that is intended to be sold as a single consumer unit. Each different multipack of the same trade item must have a different GTIN assigned.

For example

- A shrink-wrapped Easter basket that contains several different toys and candies, some individual items with bar codes and some without.
- A 6-pack of men's sports socks with no bar codes on individual socks.

SETPACK – This is a standard assortment of trade items. The setpack itself is assigned a unique GTIN and is scannable at the Point-of-Sale by the retailer. Each different item within the setpack has a unique GTIN and is scannable at the Point-of-Sale and may or may not be orderable separately outside of the setpack.