



## General Specifications Change Notification (GSCN)

WR #	GSCN Name	Ratification Date
21-423	Identification of bundles	Jun 2022

### Associated Work Request (WR) Number:

### Background:

The GTIN Modernisation MSWG is working to clarify the rules and guidance related to identifying bundles. These are the recommended updates and additions to aid in determining when a GTIN should be assigned and what party is responsible for assigning a GTIN to bundles.

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- **General retail consumer trade items** use omnidirectional linear barcodes that are read by high-volume omnidirectional retail POS scanners or linear hand-held scanners. This scanning environment cannot read 2D matrix symbols.
- **Regulated healthcare retail consumer trade items** require a high capacity symbology, such as 2D matrix symbols, but these cannot be deployed for high-volume omnidirectional retail POS. Regulated healthcare retail consumer trade items marked with 2D matrix symbols are intended to be read in lower-volume retail scenarios or hospital pharmacies or in high volume applications such as distribution centres.
- **Non-retail trade items** are any trade item that does not cross retail POS. Commonly, these trade items will appear in mixed scanning environments (laser, image-based, etc.) depending on the application and industry sector. Typical examples include trade item groupings, direct part marked items, etc.

#### 2.1.1.5 Books and serial publications

Published material (newspapers, magazines and books) requires special consideration due to the following factors:

- A solution for published material should address the requirement to process returns (sorting and counting) to wholesalers and publishers. This implies the reading of a supplementary number that is not required for item identification.
- The international systems, ISSN, ISBN and ISMN, already handle the numbering of publications and books.

#### 2.1.1.6 Single item or trade item grouping

A trade item may be a single, non-breakable unit or a predefined grouping of a series of single items.

Trade items that are single, non-breakable units may be comprised of items that are not uniquely identified on the package and are not marked for individual sale (e.g., a bag of individually wrapped candies or toothbrushes of varying colours), which were referred to as "Random assortments" in versions of the GS1 General Specifications prior to v.22.

Such trade item groupings may be present in a wide variety of physical forms, such as a fibreboard case, a covered or banded pallet, a film wrapped tray, or a crate with bottles. Trade items consisting of a single unit are identified with a Global Trade Item Number (GTIN). Trade item groupings of identical or different units, each identified with a GTIN, are identified with a separate GTIN; the individual trade item GTIN, within any grouping, remains the same. Example: trade item A has the same GTIN whether it is sold as a single unit in a case of twelve or sold as a single unit in a case of twenty-four.

#### 2.1.1.7 Trade item assortments/bundles

Trade item assortments/bundles are combinations of trade items. Trade item assortments/bundles can be classified as follows:

- **Physical trade item assortments/bundles** are combinations of different trade items that are physically combined into a single trade item, thus creating a new trade item.



**Note:** Combinations of the same trade items are either trade item groupings for general distribution (see sections 2.1.1.6 and 2.1.7) or pre-pack/multi-pack/set pack for apparel and home fashion (see section 4.3.4.3.1).

- **Virtual trade item assortments/bundles** are combinations of multiple (same or different) trade items that are not physically combined into a single trade item, but that are presented in selling environments as offers of combinations of multiple trade items (e.g., products or services).



**Note:** Across the GS1 General Specifications, there are a number of terms that are used to describe combinations (e.g., "grouping", "trade item grouping", "multi-pack", "trade item assortment/bundle"). Every effort has been made to ensure that these terms are used

consistently, noting that some of these terms may have different colloquial meanings when used outside of the GS1 General Specifications.

- ✓ **Note:** This section does not apply to regulated healthcare non-retail consumer trade items dispensed in a controlled environment (e.g., hospital, clinician's office)
- ✓ **Note:** Creation of trade item assortment/bundles must comply with all regulations and laws.

#### 2.1.1.7.02.1.1.7.1 Physical trade item assortments/bundles

Three kinds of assortments exist:

- **Predefined assortments:** An trade item assortment/bundle that comprises a fixed count composition of two or more different trade items, each identified with a GTIN (see section 4.3), that is declared on the package. The trade items contained within the assortment may be trade items of one or more manufacturers GTIN allocators.



#### Predefined

Fixed composition of two or more trade items. Each trade item within has its own GTIN and could be sold individually.

When an assortment contains items from multiple manufacturers Regardless of the contents of the trade item assortment/bundle, GTIN allocation is the responsibility of the organisation that creates the trade item assortment/bundle.

Any change in the configuration of the assortment is considered a new trade item.

**For example:** a predefined assortment/bundle contains a total of three trade items, always four of GTIN XA, one of GTIN B and one of GTIN CY.

- **Dynamic assortments:** An trade item assortment/bundle that comprises a variable composition of a fixed total count comprised of two or more different trade items, each identified with a GTIN (see section 4.3). All the trade items and their GTINs will have been communicated to the buyer before trading takes place. The buyer has accepted that the seller-GTIN allocator may change the trade item assortment/bundle without any prior notice.



#### Dynamic

There is a defined pool of trade items that may be in the trade item assortment/bundle. The quantity of each trade item in any instance of the trade item assortment/bundle is not guaranteed, but total number of trade items does not change. Each trade item within the assortment has its own GTIN and could be sold individually.

The trade items contained within the trade item assortment/bundle may be trade items of one or more manufacturers GTIN allocators. Regardless of the contents, GTIN allocation When an assortment contains items from multiple manufacturers the GTIN requirements for the trade item assortment/bundle is the responsibility of the organisation that creates the trade item assortment/bundle.

**For example:** a dynamic assortment could contain any three trade items with three different GTINs, each from a pool of trade items that have been defined for use in the dynamic trade item assortment/bundle, as long as there are always three trade items within the trade item assortment/bundle, total of six trade items, with different combinations of GTIN X and GTIN Y as long as there are always six trade items within the assortment.

**Random assortments:** An assortment of two or more products that are not uniquely identified on the package and are not marked for individual sale (e.g., a bag of individually wrapped candies or colours of toothbrushes).

### 2.1.1.7.2 Virtual trade item assortment/bundle

**Virtual trade item assortment/bundle:** A combination of multiple (same or different) trade items that are NOT physically combined into a single trade item. Virtual trade item assortments/bundles are most often related to the listing/selling practice of virtually combining multiple trade items into a number of offers for sale, typically in online environments. Each individual trade item within a virtual trade item assortment/bundle SHALL be identified with a GTIN (see section 4.3). The virtual trade item assortment/bundle itself does not require assignment of a GTIN, as it is not a physical combination of trade items and is not itself a new trade item.

**Note:** Virtual trade item assortments/bundles are not stocked as single trade items. Sales of virtual trade item assortments/bundles are fulfilled by assembling the purchased quantity of each individual trade item at the time of order fulfilment.

**Figure 2.1.1.7 Trade item assortment/bundle summary**

	Assortment/bundle type	Graphic	Assortment GTIN? (Y/N)	Item mix: fixed/variable	Physically combined together? (Y/N)	Item GTINs? (Y/N)
Physical	<b>Predefined</b> A trade item assortment bundle that comprises a fixed composition of two or more different trade items, each identified with a GTIN		Y	Fixed	Y	Y
	<b>Dynamic</b> A trade item assortment/bundle that comprises a variable composition of a fixed total count of two or more different trade items, each identified with a GTIN		Y	Variable	Y	Y
Virtual	A combination of multiple trade items that are NOT physically combined into a single trade item.		N	Fixed	N	Y

### 2.1.1.7.2.1.1.8 Regulated healthcare trade items (RHTI)

Regulated healthcare trade items (RHTI) are pharmaceutical or medical device trade items that are sold or dispensed in a controlled environment such as in a retail pharmacy, hospital pharmacy, etc.

#### 2.1.1.7.2.1.1.8.1 Marking levels of regulated healthcare trade items

For regulated healthcare trade items (RHTI) three levels of identification have been developed:

- Minimum level of AIDC marking.
- Enhanced level of AIDC marking.
- Highest level of AIDC marking.

The identification solution for each of these levels may differ between the category of "pharmaceuticals" (which includes biologics, vaccines, controlled substances, clinical trial pharmaceuticals and therapeutic nutritional products) versus the category of "medical devices" (which includes all classes of medical devices) and may also differ by configuration or packaging



## Data carrier specification

### Carrier choices

- For multi-sector use symbols from the EAN/UPC symbology family (UPC-A, UPC-E and EAN-13) may be used to encode the GTIN-12 or GTIN-13 of the trade item grouping. ~~If used, the GTIN-8 is encoded in an EAN-8 barcode. GTIN-8 can only be used when all other packaging size constraints are met, see section 4.3.7.~~
- ITF-14 symbols may be used on trade item groupings where printing conditions require the application of a less demanding symbology. ITF-14 symbols can encode the GTIN-12, GTIN-13, or GTIN-14 of the item.
- A GS1-128 barcode or GS1 DataBar barcode with GS1 Application Identifier (01) may be used to encode a GTIN-12, GTIN-13, or GTIN-14 that identifies the trade item if the printing conditions allow. The choice of one of these symbologies is particularly relevant if there is a need to encode attribute information in addition to the identification number.

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Some scanning systems may be able to handle 2D barcodes as well as linear barcodes. In these environments, GS1 2D symbols may be used in addition to linear symbols. For information on how to manage multiple barcodes see section 4.16.

For trade items used in manufacturing and maintenance, repair & overhaul (MRO) processes the following data carrier choices take precedence over the carrier choices above: GS1-128, GS1 DataMatrix, GS1 QR Code and EPC/RFID.

For healthcare the carrier selections noted at the end of section 2.1.7.1 take precedence over the carrier choices above and apply to all regulated healthcare retail consumer trade items.

### Symbol X-dimensions, minimum symbol height and minimum symbol quality

For multi-sector use other than regulated healthcare trade items see section 5.12.3.2, *GS1 symbol specification table 2*.

For regulated healthcare non-retail consumer trade items see section 5.12.3.8, *GS1 symbol specification table 8*.

For manufacturing and MRO processes see 5.12.3.4, *GS1 symbol specification table 4*.

### Symbol placement

All the symbol placement guidelines defined in section 6.

### Unique application processing requirements

For a description of processing requirements, see section 7.

## 2.1.7.3 Trade item groupings of mixed trade items

### Application description

A trade item grouping that is a predefined grouping of two or more different trade items.

For example:

- Product C is a grouping of Product A (GTIN 'A') and Product B (GTIN 'B'), and is identified with either a GTIN-12 or GTIN-13, GTIN 'C.'
- GTIN 'C' could then be used to construct a GTIN-14 for a trade item grouping comprised of Product C.

As shown in figure 2.1.7.3-1, the GTIN-12s 614141234561 and 614141345670 identify the two trade items in the [trade item](#) assortment/[bundle](#) identified by the GTIN 614141456789.

**Figure 2.1.7.3-1.** Example of trade item grouping of mixed trade items

Indicator	GTIN of trade item less its check digit	Check digit	Description	Quantity
	061414123456 061414134567	1 0	Retail consumer trade item (Product A) Retail consumer trade item (Product B)	Single Single
	061414145678	9	Retail consumer trade item (Product C)	<a href="#">Trade item assortment/bundle</a>
1	061414145678	6	Trade item grouping	A grouping of the <a href="#">trade item assortment/bundle</a>
...	...	...	...	...
8	061414145678	5	Trade item grouping	Another grouping of the <a href="#">trade item assortment/bundle</a>

The indicators 1 to 8 may be used to create new GTIN-14s. When these eight indicators have been used, further groupings must be identified with either a GTIN-13 or GTIN-12. Indicator digit 9 is reserved for variable measure trade items, see section [2.1.10](#).

**GS1 key****Required**

The allowed key formats for this application are:

- GTIN-12
- GTIN-13
- GTIN-14

**Rules**

All the GTIN rules described in section [4](#); in addition, the GTIN-14 is valid for trade item groupings only when the trade item contained is a [trade item mixed-assortment/bundle](#) of two or more different trade items.

**Attributes**

Not applicable

**Data carrier specification****Carrier choices**

- Symbols from the EAN/UPC symbology family (UPC-A, UPC-E and EAN-13) may be used to encode the GTIN-12 or GTIN-13 of the trade item grouping.
- ITF-14 symbols may be used on trade item groupings where printing conditions require the application of a less demanding symbology. ITF-14 symbols can encode the GTIN-12, GTIN-13, or GTIN-14 of the item.
- A GS1-128 barcode or GS1 DataBar barcode with GS1 Application Identifier (01) may be used to encode a GTIN-12, GTIN-13, or GTIN-14 that identifies the trade item if the printing conditions allow. The choice of one of these symbologies is particularly relevant if there is a need to encode attribute information in addition to the identification number.

Some scanning systems may be able to handle 2D barcodes as well as linear barcodes. In these environments, GS1 2D symbols may be used in addition to linear symbols. For information on how to manage multiple barcodes see section [4.16](#).

For trade items used in manufacturing and maintenance, repair & overhaul (MRO) processes the following data carrier choices take precedence over the carrier choices above: GS1-128, GS1 DataMatrix, GS1 QR Code and EPC/RFID.



## 4.3 GTIN rules

### 4.3.1 Management of uniqueness

Global Trade Item Numbers (GTINs) must be allocated uniquely. GTINs SHOULD NOT contain any intelligence or parsable strings. The embedding of internal codes is discouraged because it is often found that the rules for changing them differ from the rules for changing a GTIN.

For some product types (e.g., healthcare items) it is common for national regulators to require the submission of a product filing from a party based within the jurisdiction of the regulator. Such arrangements have no direct impact on GTIN Management but need to be covered by the normal contractual arrangements (e.g., licenced distributor, subsidiary, reseller).

### 4.3.2 Allocating the numbers

A Global Trade Item Number (GTIN) is used to identify any ~~trade item~~ (trade item-product or service) upon which there is a need to retrieve predefined information and that may be priced or ordered or invoiced at any point in any supply chain. A separate, unique GTIN is required whenever any of the ~~predefined characteristics-trade item declarations of an item~~ are different in any way that is relevant to the trading process.

The details on when to change a GTIN are included in the Global Trade Item Number (GTIN) Management Standard. ~~This standard that~~ is designed to help industry make consistent decisions about the unique identification of trade items in open supply chains. The [GTIN Management Standard](#) defines when GTIN changes are needed at the retail consumer trade item level (base unit) as well as on higher level trade items (e.g., case, pallet) that currently exist and are used in distribution processes.

The [GTIN Management Standard](#) as well as specific standard rules that apply to upstream, fresh foods, ~~and healthcare and other specific sectors~~ can be found at <https://www.gs1.org/1/gtinrules/en>.

Local, national or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the [GTIN Management Standard](#).

#### 4.3.2.1 GTIN Management definitions

The following terms may be useful when reviewing the [GTIN Management Standard](#) that is published on <https://www.gs1.org/1/gtinrules/en>:

~~Logistic unit~~ – An item of any composition established for transport and/or storage that needs to be managed through the supply chain. It is identified with an SSCC (Serial Shipping Container Code).

■

~~Trade item~~ – Any item (product or service) upon which there is a need to retrieve predefined information and that may be priced, ordered, or invoiced at any point in any supply chain.

■ **Retail consumer trade item** – The trade item intended to be sold to the end consumer at retail point-of-sale. They are identified with a unique GTIN-13, GTIN-12, or GTIN-8. (See section 2).

■ **Retail consumer trade item variant** – A change to a retail consumer trade item (which may itself be a homogeneous or a physical trade item assortment/bundle predefined assortment of other retail consumer trade items) ~~which that~~ does not require a new GTIN, but where identification of the variation may be required.

■ **Trade item** – Any item (product or service) upon which there is a need to retrieve predefined information and that may be priced, ordered, or invoiced at any point in any supply chain.

■ **Trade item grouping** – A grouping of retail consumer trade items that is not intended for point-of-sale scanning. It is identified with a unique GTIN-14, GTIN-13, or GTIN-12.

- **Non-GTIN pack** — A packaging level for trade items where there is no trading partner requirement for Global Trade Item Number (GTIN) identification. If a GTIN is required, then this item becomes a retail consumer trade item or trade item grouping.
- ✓ **Logistic unit** — An item of any composition established for transport and/or storage that needs to be managed through the supply chain. It is identified with an SSCC (Serial Shipping Container Code).
- ✓ **Note:** The [GTIN Management Standard](#) is intended for global use. Exceptions may occur only when local regulatory or legal requirements mandate otherwise.
- ✓ **Note:** The exchange of product data across global supply chains requires compliance with rules for product identity and data attribution. It is recommended that all retail consumer trade items are registered with GS1. For more information see your [GS1 Member Organisation](#).

#### 4.3.2.2 **Predefined characteristics**Trade item declarations

Trade item declarations are the set of all information about a trade item (e.g. manufacturer warranty, ingredients, instructions for use, specifications, contents, certifications). For a trade item, this is all of the information that is on the label and in the original packaging. It also includes relevant aspects of the extended packaging.

Although this list is not exhaustive, the basic predefined characteristics trade items declarations of a trade item are:

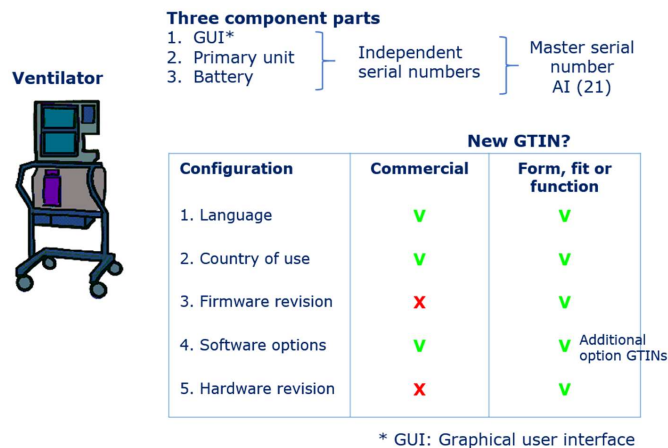
- The primary brand or, as may be defined by regulation, (the product name and/or, product description).
- The trade item type and variety.
- The net content of trade item (and/or net weight, volume, or other dimension impacting trade).
- If the trade item presents is a grouping, the number of elementary items contained and their subdivision in sub-packaging units.
- For a predefined trade item assortment/bundle, the composition of the trade item assortment/bundle.

A modification to any of the basic elements that characterise a trade item will usually lead to a change in the Global Trade Item Number (GTIN).

- ✓ **Note:** These rules are intended for global use. Exceptions may occur only when local regulatory or legal requirements mandate otherwise. For example, in some industries, such as healthcare, regulations or other requirements may dictate that any trade item changes require a new GTIN.
- ✓ **Note:** For complex products, such as some medical devices, key consideration for GTIN allocation is the commercialisation of the product (e.g., different for pricing or ordering or invoicing). If the product is 'different' a 'different GTIN' is required. The figure below is a scenario to represent the difficulties in determining when a GTIN change is necessary for complex medical devices, depending upon how the device is viewed (i.e., from a commercial and/or form, fit, function perspective). Nominally the commercial aspects of an item determine a GTIN change, the objective is to recognise that other important factors reside which may not necessarily signify a commercialisation shift, but would impact the GTIN assignment – particularly in the healthcare industry. It is the brand owner's responsibility to manage appropriately the configuration of any complex device and its appropriate GTIN(s)

assignment. The example shows major hardware components managed by GTIN and serial number combinations, recognising that within this complex medical device there are other potential parameters where configuration change must be managed; GTIN change may be dictated based on the manufacturers change management process. It is the brand owner that decides upon the identification requirement.

**Figure 4.3.2-1.** Example of the complexity of a medical device product with regard to GTIN allocation



### 4.3.2.3 Trade item variants

#### 4.3.2.3.1 Consumer product variants

Per brand owner discretion, a consumer product variant (CPV) if used, SHALL be used with GTIN on retail consumer trade items in the following conditions:

1. A CPV may be assigned by the brand owner to a variation of a retail consumer trade item, which SHALL NOT require a new GTIN per the [GTIN Management Standard](#), but where communication regarding the variation may be required.
2. Each retail consumer trade item variation SHALL NOT have more than one CPV value.
3. CPV may be assigned to retail consumer trade items that contain a homogeneous quantity or predefined assortment of retail consumer trade items.
4. When a retail consumer trade item is offered in different quantities (e.g., unit, six pack, 12 pack) the various packages for these quantities are each identified with a unique GTIN. Those packages may also each include a unique CPV and the actual data value for the CPV may or may not be the same between the various packages.
5. The CPV of a retail consumer trade item that contains a homogeneous quantity or predefined assortment of retail consumer trade items may change independently from the CPV of the contained retail consumer trade items, but shall change if the CPV of any of the contained retail consumer trade item changes.

#### 4.3.2.3.2 Minor trade item variants for trade item groupings

For trade item groupings containing units that are themselves minor trade item variants of trade items whose GTINs remain unchanged, the rule is the following:



- If the identification of minor trade item variants is only relevant to the manufacturer, they SHOULD distinguish these variants by using the element string internal product variant, AI (20). Examples include an identical product made in two separate locations or the same product with a minor package design change.

### 4.3.3 Responsibility for allocating the Global Trade Item Number

The established terminology of the GS1 system may not be familiar to all industries that use the GS1 system. As of v23 of the GS1 General Specifications, a broader terminology framework is used to enable industry to consistently and accurately identify the party that has the responsibility to allocate/assign the GTIN.



**Note:** The term GTIN allocator is used to broadly and consistently refer to the party responsible for allocation of GTINs to trade items (defined in 4.3.3.1). This term is harmonised with the historical use of the term brand owner below.

There are foundational rules for the assignment of GTINs to trade items that apply in all scenarios:

- A trade item SHALL be assigned a GTIN before there is an offer made for sale of the trade item.
- GTIN is to be assigned at the earliest point in any trade item's lifecycle after which a GTIN allocator has been established.
- No downstream party (e.g., distributor, wholesaler, importer, merchant) may assign a different GTIN to a trade item that already has a GTIN, provided that the trade item is not changed in a way that would require a new GTIN as per GS1 standards (see *GTIN Management standard*).

#### 4.3.2.4.3.3.1 Responsibility for branded items

Allocation of a GTIN to a trade item is the responsibility of the party that warrants the trade item declarations, known as the GTIN allocator (see section 4.3.2.2 for more on trade item declarations).

Prior to v.23 of the GS1 General Specification, the party responsible for allocation of a GTIN to a trade item was referred to as the "brand owner". In industries where the term "brand owner" is relevant and familiar, this term SHALL be considered as equivalent to the term GTIN allocator.

For branded items, the brand owner is the GTIN allocator, since the brand owner is the party, the organisation that owns the specifications of the trade item, and, therefore is the party that warrants the trade item declarations, regardless of where and by whom it is manufactured, is normally responsible for the allocation of the Global Trade Item Number (GTIN). On joining a GS1 Member Organisation, the brand owner licences a GS1 Company Prefix, which is for the sole use of the company to which it is assigned.

The brand owner is the organisation that owns the trade item specifications and may be:

There are situations when the GTIN allocator is:

- The manufacturer or supplier: The company party that manufactures the trade item or has it manufactured, in any country, and sells it under its own brand name.
- The importer or wholesaler: The importer or wholesaler party that has the trade item manufactured, in any country and sells the trade item it under its own brand name or the importer or wholesaler that changes the trade item (for example by modifying the packaging of the trade item).
- The retailer: The retailer that has the trade item manufactured, in any country, and sells the trade item it under its own brand name.
- Any party that chooses to take responsibility for the trade item declarations of a trade item that has not yet been assigned a GTIN and, in doing so, sells it under their own brand name.

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- ✓ **Note:** In ALL cases, the party who warrants the trade item declarations is the party who SHALL assign the GTIN to a trade item. With that action, the party becomes the GTIN allocator.
- ✓ **Note:** On joining a GS1 Member Organisation, a GTIN allocator is licenced a GS1 Company Prefix and/or individual GS1 Identification Keys, which are for the sole use by the GTIN allocator to which they are assigned.

#### ~~4.3.2.54.3.3.2~~ **Responsibility exceptions and non-branded items** Unique scenarios

There are some exceptions-unique scenarios to the rules regarding responsibility for GTIN allocation described section 4.3.3.1 in:

- **Non-branded items:** The GTIN allocator for trade items Items without a brand name and generic items (not private labels) are still assigned Global Trade Item Numbers (GTINs) by their SHOULD be the manufacturer of the non-branded item. As different manufacturers and/or suppliers may supply items that appear identical to the a buyer (this who could be a consumer, as well as a retailer or a manufacturer), it is possible that similar, or even identical, unbranded or generic items will items that are apparently the same have different GTINs. Companies that trade in these items need to organise their computer applications (e.g., replenishment programs) to cope with this eventuality. Examples of items that sometimes have no brand are apples, plasterboard, candles and drinking glasses. Examples for trade items that sometimes have no brand and are not intended for retail include salt, fragrances and food cans.
- **Customer specific items:** If a trade item is made specifically for one trade customer (buyer) and is orderable only by this customer, then the customer (buyer) assigns SHOULD be the GTIN allocator. In this case the GTIN SHOULD be formed-created from the customer's GS1 Company Prefix (see section 1.4.4) or should be an individual GTIN Key from the customer (buyer) (see section 1.4.4). If the supplier (sellermerchant) sells a trade item to more than one customer (buyer) or intends to sell to more than one buyer, then the merchant SHALL be the GTIN allocator. seller assigns the GTIN.
- **Contracted parties:** If a party is contracted to act on behalf of (or to represent) a GTIN allocator, a trade item created by the contracted party for the GTIN allocator SHALL be assigned a GTIN from the GTIN allocator's licenced GS1 Company Prefix or individual GS1 Keys. In such situations, it is critical to ensure that such contracts include language that ensures all allocated GTINs are properly registered and managed by the GTIN allocator.
- **Other exceptions:** If a trade item the brand owner does not assign a GTIN, the importer or another intermediary can assign an item a temporary GTIN. This would imply that the importer takes on the role of have a GTIN, a downstream party MAY choose to take responsibility for the brand owner and could, for example, register trade item declarations and become the GTIN allocator the product in a data catalogue. This temporary GTIN may be used until a GTIN is assigned in for the normal way trade item (subject to compliance with any relevant laws). Alternatively, a retail organisation downstream party can assign an internal number (e.g., RCN) to an a trade item that does not yet have a GTIN assigned to it, but only if the trade item is used restricted for use within its own stores/platform.

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#### ~~4.3.34.3.4~~ **Sector-specific rules**

##### ~~4.3.3.14.3.4.1~~ **GTIN allocation rules for healthcare**

Specific rules that apply to healthcare trade items can be found in the [GS1 Healthcare GTIN Allocation Rules Standard](#).

##### ~~4.3.3.24.3.4.2~~ **GTIN allocation rules for upstream suppliers**

Specific rules that apply to packaging and raw material trade items supplied to manufacturing companies can be found on <https://www.gs1.org/1/gtinrules/en/tree/29/upstream>.



Term	Definition
codeword	A symbol character value. An intermediate level of coding between source data and the graphical encodation in the symbol.
component/part	An item that is intended to undergo at least one further transformation process to create finished goods for the purpose of downstream consumption
Component/Part Identifier (CPID)	The unique identifier for a component/part, comprising a GS1 Company Prefix and a component/part reference
Composite Component	The 2D symbol component of a GS1 composite symbol.
concatenation	The representation of several element strings in one barcode.
Conformant	The state in which a system meets a specified standard.
consignment	A grouping of logistic or transport units assembled by a freight forwarder or carrier to be transported under one transport document (e.g., waybill).
consumer product variant (CPV)	An alphanumeric attribute of a GTIN assigned to a retail consumer trade item variant for its lifetime.
country subdivision	Principle administrative divisions, or similar areas, of a country included in <i>ISO 3166-1</i> . Examples are a state in the US, a region in France, a canton in Swiss.
coupon	A voucher that can be redeemed at the point-of-sale for a cash value or free item.
coupon issuer	Party issuing the coupons, bearing the commercial and financial responsibility for the coupons.
customer	The party that receives, buys, or consumes an item or service.
data character	A single numeric digit, alphabetic character or punctuation mark, or control character, which represents meaningful information.
data field	A field that contains a GS1 identification key, an RCN, or attribute information
Data Matrix symbology	A standalone, two-dimensional matrix symbology that is made up of square modules arranged within a perimeter finder pattern. Data Matrix using ECC 200 error correction is the only version that supports GS1 system identification keys, including the Function 1 Symbol Character (FNC1). Data Matrix symbols are read by two-dimensional imaging scanners or vision systems.
data titles	Data titles are the abbreviated descriptions of element strings which are used to support manual interpretation of barcodes.
digital coupon	A digital coupon is an electronic presentation, that is distributed and presented without manifesting as "paper" or in other hard-copy form, and that can be exchanged for a financial saving or for loyalty points when making a purchase.
direct mode	Mobile device information retrieval function when the barcode contains either the address (URL) of the content or service, or the content itself, in-line.
direct part marking (DPM)	Direct part marking refers to the process of marking a symbol on an item using an intrusive or non-intrusive method.
direct print	A process in which the printing apparatus prints the symbol by making physical contact with a substrate (e.g., flexography, ink jet, dot peening).
document type	A component of a Global Document Type Identifier (GDTI) assigned by the document issuer to create a unique GDTI.
dynamic assortment	A trade item that comprises <del>a variable composition of a fixed count of</del> two or more different trade items, <del>each identified with a GTIN, with a fixed total count, where the count of each trade item contained may change.</del>
EAN/UPC symbology	A family of barcodes including EAN-8, EAN-13, UPC-A and UPC-E barcodes as well as the 2- and 5-digit add-ons. See also EAN-8 barcode, EAN-13 barcode, UPC-A barcode and UPC-E barcode.
EAN-13 barcode	A barcode of the EAN/UPC symbology that encodes GTIN-13 or RCN-13.
EAN-8 barcode	A barcode of the EAN/UPC symbology that encodes GTIN-8 or RCN-8.
economic operator (per EU 2018/574)	An economic operator is a business or other organisation which supplies goods, works or services within the context of market operations. Related to requirement for EOID for each country in which a party operates a facility.
Electronic Product Code (EPC)	An identification scheme for universally identifying physical objects (e.g., trade items, assets and locations) via RFID tags and other means. The standardised EPC data consists of an EPC (or EPC Identifier) that uniquely identifies an individual object, as well as an optional filter value when judged to be necessary to enable effective and efficient reading of the EPC tags.
element	A single bar or space of a linear barcode symbol.



Term	Definition
GS1 DataMatrix	A subset of Data Matrix which uses the function that allows the encoding of element strings.
GS1 Digital Link URI	A Web URI syntax for expressing GS1 identifier keys and attributes in a format using GS1 Application Identifiers and GS1 Application Identifier data fields as specified in the GS1 Digital Link standard.
GS1 DotCode	A subset of AIM DotCode which uses the function that allows the encoding of element strings.
GS1 EANCOM®	The GS1 standard for Electronic Data Interchange (EDI) that is a detailed implementation guideline of the UN/EDIFACT standard messages using the GS1 identification keys.
GS1 element string	A syntax for expressing GS1 identifier keys and attributes in a format using GS1 Application Identifiers and GS1 Application Identifier data fields.
GS1 Global Office (GS1 GO)	GS1 is a neutral, not-for-profit organisation that provides global standards for efficient business communication. The Global Office, located in Brussels (Belgium) and Ewing, NJ (USA) is the guardian, and provides an open, user-driven, forum for ongoing maintenance and development, of the GS1 standards, guidelines and statutes.
GS1 Global Standards Management Process (GSMP)	GS1 created the Global Standards Management Process (GSMP) to support standards development activity for the GS1 system. The GSMP uses a global consensus process to develop supply chain standards that are based on business needs and user-input
GS1 identification key	A unique identifier for a class of objects (e.g., a trade item) or an instance of an object (e.g., a logistic unit).
<u>GS1 identification licensee</u>	<u>The person (natural or legal) to which the right to use a GS1 Company Prefix or a GS1 identification key has been granted through an agreement with a GS1 Member Organisation or GS1 Global Office, acting as licensor. GS1 identification licensees may use the licensed GS1 Company Prefix or GS1 identification key, subject to any terms and conditions in place when the licence was granted or set by the licensor from time to time, until such time as the agreement under which the licence was granted expires or in perpetuity if the agreement has no expiration date.</u>
GS1 Member Organisation (GS1 MO)	A member of GS1 that is responsible for administering the GS1 system in its country (or assigned area). This task includes, but is not restricted to, ensuring user companies make correct use of the GS1 system, have access to education, training, promotion and implementation support and have access to play an active role in GSMP.
GS1 Prefix	A unique string of two or more digits issued by GS1 Global Office and allocated to GS1 Member Organisations to issue GS1 Company Prefixes or allocated to other specific areas.
GS1 QR Code	A subset of QR Code which uses the function that allows the encoding of element strings.
GS1 symbologies using GS1 Application Identifiers	All GS1 endorsed barcode symbologies that can encode more than a GTIN namely GS1-128, GS1 DataMatrix, GS1 DataBar, GS1 QR Code, GS1 DotCode and GS1Composite.
GS1 system	The specifications, standards and guidelines administered by GS1.
GS1 UIC Extension 1	Character that follows and extends the EU 2018/574 UIC to identify a country of ID Issuer's appointment and operation.
GS1 UIC Extension 2	Character that follows GS1 UIC Extension 1 and extends the EU 2018/574 UIC to identify whether a GS1 or non-GS1 based algorithm is used.
GS1 XML	The GS1 standard for extensible markup language (XML) schemas providing users with a global business messaging language of e-business to conduct efficient internet-based commerce.
GS1®	Based in Brussels, Belgium and Princeton, USA, it is the organisation that manages the GS1 system. Its members are GS1 Member Organisations.
GS1-128 symbology	A subset of Code 128 which uses the function that allows the encoding of element strings.
GS1-8 Prefix	A unique string of two or more digits issued by GS1 Global Office and allocated to GS1 Member Organisations to issue GTIN-8s or allocated to issue RCN-8s (see RCN-8).
<u>GTIN allocator</u>	<u>The party that warrants the trade item declarations about a trade item to which they allocate a GTIN. This is the party who is the licensee of the GTIN applied to a specific trade item.</u>
GTIN plus attribute(s) flag	A trigger in systems to determine if additional processing is required by a barcode user for a given GTIN.
GTIN-12	The 12-digit GS1 identification key composed of a U.P.C. Company Prefix, item reference and check digit used to identify trade items.
GTIN-13	The 13-digit GS1 identification key composed of a GS1 Company Prefix, item reference and check digit used to identify trade items.

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Term	Definition
logistic measures	Measures indicating the outside dimensions, total weight, or volume inclusive of packing material of a logistic unit. Also known as gross measures.
logistic unit	An item of any composition established for transport and/or storage that needs to be managed through the supply chain. It is identified with a Serial Shipping Container Code (SSCC).
main symbol	The barcode containing the identification number of the item (e.g., GTIN, SSCC). Used to determine the placement of any additional barcode information.
measure verifier digit	A digit calculated from the measure field in a Restricted Circulation Number (RCN) that is used to check that the data has been correctly composed.
merchant	<u>The party that makes a trade item available for sale. A retailer is one type of merchant. An online seller is another type of merchant.</u>
model reference	A component of the Global Model Number (GMN) assigned by the brand owner to create a unique GMN.
module	The narrowest nominal width unit of measure in a barcode. In certain symbologies, element widths may be specified as multiples of one module. The nominal width (& height for 2D barcodes) of a single module is equivalent to the X-dimension
modulo 10	The name of the algorithm – a simple checksum formula in the public domain – used to create a check digit for those GS1 identification keys that require one.
multiple unit blister/package	Immediate package for a medicine with more than one single unit. Package which fully encloses the pill/caplet/capsule. Each dosage form may be individually packaged. The individually blistered dosage forms are attached to each other in one strip.
National Healthcare Reimbursement Number (NHRN)	National and/or regional identification numbers used on pharmaceutical and/or medical devices where required by national or regional regulatory organisations for product registration purposes and/or for the management of healthcare provider reimbursement.
National Trade Item Number (NTIN)	A coding scheme, administered in the healthcare sector by a national organisation for which a GS1 Prefix has been issued to permit its uniqueness within the GTIN pool but without assurance of full compatibility with GTIN functionality. The result is a product identification number assigned by a third party (not the brand owner or manufacturer). Example: the CIP (Club Inter Pharmaceutique) in France administered by the French Health Products Safety Agency (AFSSAPS).
non-human readable interpretation text (non-HRI)	Characters such as letters and numbers that can be read by persons and may or may not be encoded in GS1 AIDC data carriers and are not confined to a structure and format based on GS1 standards (e.g., a date code expressed in a national format that could be used to encode a date field in a GS1 AIDC data carrier, brand owner name, consumer declarations).
odd parity	A characteristic of the encodation of a symbol character whereby the symbol character contains an odd number of dark modules.
omnidirectional linear barcode	A linear barcode symbology designed to be read in segments by suitably programmed laser point-of-sale (POS) scanners.
packaging component	Objects such as bottles, caps and labels to package a consumer trade item.
packaging component number	Global Trade Item Number (GTIN) attribute used to establish a relationship between a finished consumer trade item and packaging components.
payment slip	The end customer's notification of a demand for payment for a billable service (e.g., utility bill) comprising an amount payable and payment conditions.
physical trade item assortment/bundle	<u>A combination of different trade items that are physically combined into a single trade item, thus creating a new trade item.</u>
plain syntax	This syntax is just the GS1 identification key with no additional characters or syntactic features.
point-of-care (POC)	Location where dispensing or use of a non-retail, regulated healthcare pharmaceutical or medical device to or for a patient occurs.
point-of-sale (POS)	Refers to the retail checkout where omnidirectional linear barcodes must be used to support high-volume laser-based scanning or low volume checkout where linear barcodes (or for regulated healthcare trade items, GS1 DataMatrix) are used with image-based scanners.
predefined assortments	<u>A trade item that comprises a fixed composition of two or more different trade items, each identified with a GTIN, with a fixed total count, where the count of each trade item contained does not change.</u>
price verifier digit	A digit calculated from the price element in a Restricted Circulation Number (RCN) that is used to check that the data has been correctly composed.



Term	Definition
product model	A base product design or specification from which a trade item is derived.
QR Code symbology	A two-dimensional matrix symbology consisting of square modules arranged in a square pattern. The symbology is characterised by a unique finder pattern located at three corners of the symbol. QR Code symbols are read by two-dimensional imaging scanners or vision systems.
Quiet Zone	A clear space which precedes the start character and follows the stop character of a linear barcode or surrounds a 2D symbol.
Quiet Zone Indicator	A greater than (>) or less than (<) character, printed in the human readable field of the barcode, with the tip aligned with the outer edge of the Quiet Zone.
radio frequency	Any frequency within the electromagnetic spectrum associated with radio wave propagation. When radio frequency power is supplied to an antenna, an electromagnetic field is created that then is able to propagate through space. A radio frequency signal that can be processed by a radio frequency receiver. Many wireless technologies are based on radio frequency field propagation.
radio frequency identification (RFID)	A technology that uses radio frequency electromagnetic fields or waves to automatically identify and track tags attached to objects. An RFID system consists of RFID tags and readers. When triggered by a radio frequency electromagnetic interrogation signal from a nearby RFID reader, the RFID tag transmits digital data, usually a unique identifier like an EPC, back to the reader.
random assortment	<del>A trade item that comprises two or more products that are not identified by a GTIN and are not intended for individual sale.</del>
RCN-12	A 12-digit Restricted Circulation Number (see Restricted Circulation Number).
RCN-13	A 13-digit Restricted Circulation Number (see Restricted Circulation Number).
RCN-8	An 8-digit Restricted Circulation Number (see Restricted Circulation Number)
refund receipt	A voucher produced by equipment handling empty containers (i.e., bottles and crates).
regular expression	A sequence of characters that specifies a search pattern. Usually, such patterns are used by string-searching algorithms for "find" or "find and replace" operations on strings, or for input validation.
regulated healthcare non-retail consumer trade item	A regulated healthcare trade item not intended for scanning at POS and identified with a GTIN-14, GTIN-13, GTIN-12 or GTIN-8 utilising linear or 2D matrix barcodes that can be scanned by image-based scanners.
regulated healthcare retail consumer trade item	A regulated healthcare trade item to be sold to the end consumer at a regulated healthcare retail point-of-sale (pharmacy). They are identified with a GTIN-13, GTIN-12 or GTIN-8 utilising linear or 2D matrix barcodes that can be scanned by image-based scanners.
regulated healthcare trade item	Pharmaceuticals or medical devices that are sold or dispensed in a controlled environment (e.g., retail pharmacy, hospital pharmacy).
responsible entity	The party responsible for the safety and effectiveness of the medical product at a moment in time in its life cycle, according to the approved regulatory file (including labelling) and regulatory/legal/professional obligations associated with the medical product. (e.g., brand owner, repackager, hospital pharmacy, etc.)
Restricted Circulation Number (RCN)	Signifies an identification number used for special applications in restricted environments, either defined by local GS1 Member Organisations (for regional applications such as variable measure product identification and, couponing) or by a company (for internal applications).
retail consumer trade item variant	A variation of change to a retail consumer trade item (which may itself be a homogeneous or predefined assortment of other retail consumer trade items) which does not require a new GTIN, but where identification of the variation may be required.
returnable asset	A reusable entity owned by a company that is used for transport and storage of goods. It is identified with a GRAI.
separator character	Special character(s) that are defined as part of GS1 symbologies and used to separate concatenated element strings, based on their positioning in the GS1 barcodes.
serial number	A code, numeric or alphanumeric, assigned to an individual instance of an entity for its lifetime. Example: a unique individual item may be identified with the combined Global Trade Item Number (GTIN) and serial number.
serial reference	A component of the Serial Shipping Container Code (SSCC) assigned by the physical builder or brand owner of the logistic unit to create a unique SSCC.
Serial Shipping Container Code (SSCC)	The GS1 identification key used to identify logistics units. The key comprises an extension digit, GS1 Company Prefix, serial reference and check digit.



Term	Definition
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Serial Shipping Container Code (SSCC)	The GS1 identification key used to identify logistics units. The key comprises an extension digit, GS1 Company Prefix, serial reference and check digit.
service reference	A component of the Global Service Relation Number (GSRN) assigned by the issuing organisation to create a unique GSRN.
service relation instance number (SRIN)	An attribute to the GSRN which allows to distinguish different encounters during a service relationship.
shipment	A grouping of logistic and transport units assembled and identified by the seller (sender) of the goods travelling under one despatch advice and/or Bill of Lading to one customer (recipient).
short life items	An item, preparation or reconstituted product with limited use/shelf life.
single unit package/blister	A healthcare primary package that contains one discrete pharmaceutical dosage form, i.e. a tablet, a certain volume of a liquid or that is the immediate package for a medical device like a syringe. A number of single units attached to each other, but are easily separated through a perforation would be included.
sterile packaging system	A combination of the sterile barrier system (the minimum package that prevents ingress of microorganisms and allows aseptic presentation of the product at the point of use) and the protective packaging (configuration of materials designed to prevent damage to the sterile barrier system and its contents until the point of use).
subject of care	Any person who uses or is a potential user of a healthcare service, subjects of care may also be referred to as patients or healthcare consumers.
substrate	The material on which a barcode is printed or otherwise applied.
Supplemental symbol	A GS1-128 barcode used in combination with EAN/UPC, ITF-14 or GS1-128 where additional information is required beyond the barcode that carries the GS1 key (main symbol).
supplier	The party that produces, provides, or furnishes an item or service.
symbol character	A group of bars and spaces in a symbol that is decoded as a single unit. It may represent an individual digit, letter, punctuation mark, control indicator, or multiple data characters (see also codeword).
symbol check character	A symbol character or set of bar/space patterns included within a GS1-128 or GS1 DataBar symbol, the value of which is used by the barcode reader for the purpose of performing a mathematical check to ensure the accuracy of the scanned data. It is not shown in human readable interpretation. It is not input to the barcode printer and is not transmitted by the barcode reader.
symbol contrast	An ISO/IEC 15416 parameter that measures the difference between the largest and smallest reflectance values in a Scan Reflectance Profile (SRP).
symbology	A defined method of representing numeric or alphabetic characters in a barcode; a type of barcode.
symbology identifier	A sequence of characters generated by the decoder (and prefixed to the decoded data transmitted by the decoder) that identifies the symbology from which the data has been decoded.
trade item	Any item (product or service) upon which there is a need to retrieve predefined information and that may be priced, or ordered, or invoiced at any point in any supply chain.
trade item declarations	The set of all information about a trade item (e.g., manufacturer warranty, ingredients, instructions for use, specifications, contents, certifications, predefined characteristics, and other information). For a trade item, this is all of the information that is on the label and in the original packaging. It also includes relevant aspects of the extended packaging.



Term	Definition
trade item grouping	A predefined composition of trade item(s) that is not intended for point-of-sale scanning. It is identified with a GTIN-14, GTIN-13, or GTIN-12.
trade measures	Net measures of variable measure trade items as used for invoicing (billing) the trade item.
transport process information	A set of information relevant to the processing, delivery or return of a transport unit. For example, transport process information would include address details.
transport unit	A logistic unit within the context of transport processes.
truncation	Printing a symbol shorter than the symbology specification's minimum height recommendations. Truncation can make the symbol difficult for an operator to scan.
two-dimensional (2D) symbology	Optically readable symbols that must be examined both vertically and horizontally to read the entire message. Two-dimensional symbols may be one of two types: matrix symbols and multi-row symbols. Two-dimensional symbols have error detection and may include error correction features.
U.P.C. Company Prefix	A GS1 Company Prefix starting with a zero ('0') becomes a U.P.C. Company Prefix by removing the leading zero. A U.P.C. Company Prefix is used to issue and allocate GTIN-12.
U.P.C. Prefix	A GS1 Prefix starting with a zero ('0') becomes a U.P.C. Prefix by removing the leading zero. A U.P.C. Prefix is used to issue U.P.C. Company Prefixes or allocated to other specific areas.
Unique Device Identifier – Device Identifier (UDI-DI)	A unique identifier specific to a medical device trade item represented by a Global Trade Item Number (GTIN).
Unique Device Identifier – Production Identifier (UDI-PI)	A numeric or alphanumeric code that identifies the unit of device production. The different types of UDI-PIs include serial number, lot number, software identification and manufacturing or expiry date or both types of date.
Unique Device Identifier (UDI)	A series of numeric or alphanumeric characters that is created through a globally accepted device identification and coding standard. It allows the unambiguous identification of a specific medical device on the market. The UDI is comprised of the UDI-DI and the UDI-PI. The word 'Unique' does not imply serialisation of individual production units.
Unique Identification Code (UIC) (per EU 2018/574)	Identifier of an EU 2018/574 ID Issuer that begins with an ISO 15459 Issuing Agency Code.
unit of use	Refers to an individual unit package that is prescribed for or administered to a patient regardless whether it is packaged individually or, on the contrary, the smallest package contains more than one unit. May coincide with the single unit and the base unit.
Unit of Use UDI-DI (UoU UDI-DI)	Device identifier for the unit of use, meant to associate the use of a device with a patient. In cases where the unit of use coincides with another packaging level, that level's device identifier functions as a UoU UDI-DI, otherwise a separate device identifier has to be allocated. For example, three clips (which do not carry a physical UDI marking themselves) are contained in a cartridge which is packaged inside a container, which does carry a labelled UDI.
UPC-A barcode	A barcode of the EAN/UPC symbology that encodes GTIN-12 and RCN-12.
UPC-E barcode	A barcode of the EAN/UPC symbology representing a GTIN-12 in six explicitly encoded digits using zero-suppression.
variable measure trade item	A trade item which may be traded without a predefined measure, such as its weight or length.
<u>virtual trade item assortment/bundle</u>	<u>Combinations of multiple (same or different) trade items that are not physically combined into a single trade item, but that are presented in selling environments as offers of combinations of multiple trade items (e.g., products or services).</u>
<u>warranty</u>	<u>A guarantee or claim that a party makes.</u>
wide-to-narrow ratio	The ratio between the wide elements and the narrow elements in a barcode symbology such as ITF-14 that has two different element widths.
X-dimension	The specified width of the narrowest element of a barcode (see module).