




1. Trade Item Unit Descriptors

The attribute **tradeltemUnitDescriptor** is used to describe the GTIN hierarchy level. Hierarchy is used to establish a link between different levels of a product logistical chain. Another term for item hierarchy is item containment. Item containment provides a method of identifying the contents of a GTIN that is a packaging hierarchy rather than a consumer unit. This can occur multiple times depending upon the number of levels in the hierarchy.

-  **Important:** The GS1 standards currently provide wide definitions of each Trade Item Unit Descriptor. This Guideline suggests narrower definitions as guidance which, it is believed, would bring a greater degree of consistency to the usage of Trade Item Unit Descriptors. These definitions have been approved by Change Request # 07-000017. Implementation of these definitions will be in conjunction with an upcoming GDSN maintenance release in Q3 or Q4 2007.
-  **Important:** All components of each potential level of packaging must already be defined in order to be used in Item Containment. Each level in the item hierarchy must be identified with a GTIN and a trade item unit descriptor to be sent in GDSN.
-  **Important:** Please be aware that some changes to the codes available for Trade Item Unit Descriptor are under discussion. Some codes may be withdrawn, including MULTIPACK, PREPACK, PREPACK_ASSORTMENT. Others are under consideration for withdrawal. Although these codes are still supported in the GDS Network today, participants may wish to consider transition to the codes listed in this topic, especially PALLET, CASE, PACK_OR_INNER_PACK and BASE_UNIT_OR_EACH. If changes are agreed, they will be rolled out in future releases of the GDSN Standards, and this document will be updated accordingly when the changes are deployed.

1.1. Pre-Requirement

GTINs must be registered in the GS1 Global Registry to build the item hierarchy.

1.2. When Would I Use This?

The trade item unit descriptor is a mandatory attribute in the GDSN CIN. This attribute is also used to define what level of the item hierarchy an attribute is relevant at. For example **tradeltemCountryOfOrigin** is relevant for the product hierarchy level of "Each"

Before creating a publication the manufacturer will use the trade item unit descriptor to create the parent/child GTIN relationship. Child GTIN is a reference to the GTIN of the next lower level of trade item that is contained in the item hierarchy.

1.3. How to Implement Trade Item Unit Descriptors

The following information is provided in [Table 1-1](#):

- **Name and Abbreviations** of Trade Item Unit Descriptors (commonly used by some of the trading partners)
- **Description** of the Trade Item Unit Descriptor
- **Parents** – provides guidance of the trade item unit descriptors that can be a parent of a lower level GTIN when the item hierarchy (link) is created.
- **Parent Instances** – Indicates if a GTIN could have one or more than one parent GTIN

- **Children** – provides guidance of the trade item unit descriptor that can be a child of a higher level GTIN when the item hierarchy (link) is created
- **Children Instances** – indicates if the GTIN contains a single instance of a GTIN or several unique GTINs

Table 1-1 Trade Item Unit Descriptors

tradeItemDescriptor	Description	Parents	Parent Instance	Children	Children Instance
"(TL) Transport Load"	A logistical unit which, when ordered, can provide a standard quantity of trade items from any other hierarchy level. This level can be used to define truckloads, shipping containers, rail cars, ships, and etc. This level can contain a single GTIN or multiple GTINs.	"TL"	Multiple	TL, MX, PL, DS, CA, PK, AP(SP), EA	Single/ Multiple
(PL) Pallet	A unit load that contains a single GTIN that is not display ready. Includes box pallet.	"TL", PL, MX None	Multiple	MX, PL, DS, CA, PK, AP(SP), EA	Single
(CA) Case	A standard trade item shipping unit. Includes an ½ or ¼ pallet and an ½ or ¼ b box pallet.	"TL", MX, PL, DS, CA	Multiple	DS, CA, PK, AP(SP) EA	Single
(PK) Pack / Innerpack	May be a logistical unit between a case and each, may or may not be bar-coded, that contains a single instance of a GTIN OR a consumer unit that contains single instance of a lower level GTIN that is typically bar-coded.	"TL", MX, PL, DS, CAPK, AP(SP)	Multiple	PK, AP(SP) , EA	Single
(EA) Each	The lowest level of the item hierarchy intended or labelled for individual resale.	"TL", MX, PL, DS, CA, PK, AP(SP)	Multiple	None	N/A
(MX) Mixed Module	A unit load that contains several unique GTINs OR a "display ready pallet" that may contain a single GTIN or several unique GTINs that is intended to go directly to the selling floor. Includes box pallet	"TL", PL, MX None	Multiple	MX, PL, DS, CA, PK, AP(SP), EA	Single/ Multiple
(DS) Display/ Shipper	A shipping unit that is a display (can contain a single instance of a GTIN or contains more than one unique instance of a GTIN) OR a case that contains more than one unique instance of a GTIN. Includes an ½ or ¼ pallet and an ½ or ¼ b box pallet and prepac.	"TL", MX, PL, DS, CA	Single/ Multiple	DS, CA, PK, AP(SP), EA	Single/ Multiple
(AP) Assorted Pack/Setpac	May be a logistical unit between a case and each may or may not be bar-coded that contains multiple instances of unique GTINs OR a consumer unit that contains multiple instances of lower level GTINs that are typically bar-coded.	"TL", MX, PL, DS, CA, PK, AP(SP)	Multiple	PK, AP(SP), EA	Multiple

tradeItemDescriptor	Description	Parents	Parent Instance	Children	Children Instance
(MP) MULTIPACK	A group of trade items (the same or different) that are intended to be sold as a single consumer unit at the Point-of-Sale (e.g., a three-pack of men's white T-shirts or a 12-piece set of glassware). A multipack is not intended to be broken apart and sold as individual trade items.	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)
(PP) PREPACK	Contains multiple components, each of which represents a unique consumer unit item by colour and size. or standard assortment of trade items, each different item within the prepack will be assigned a GTIN maintaining the one-to-one relationship between trade item/colour ID/size ID and GTIN. Each of the component GTINs is scannable at the Point-of-Sale and may or may not be orderable separately outside of the prepack.	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)
(PA) PREPACK_A SSORTMEN T	Contains multiple components, each of which represents a unique consumer unit item by colour and size. Includes prepacks and setpacks.	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)	DEPRECAT ED (Do Not Use)

- Note:** Debate still exists within the GDSN community regarding the definitions and consistent use of this attribute across the community. The above guidelines provide interim guidance until a revised standard is created. A recommendation is for the GDSN community to sponsor a GSMP Change request to form a Work Team and develop a recommendation.
- Note:** ½ or ¼ pallet are terms typically used in European markets (see Section [1.5.3](#))

1.4. Examples of Trade Item Unit Descriptors

1.4.1. (EA) Each/Multipack

- Example 1**– simple each – a single box of cereal
- Example 2** – complex each (**the components are NOT barcoded**)
 - a. An each consisting of four of the same exact canisters of peanuts.
 - b. An each with three white tee shirts sold in a single pack.
 - c. An each of three pack of sport socks.
 - d. A box of hot cocoa that contains 10 envelopes
 - e. An each that is a variety that may consist of 3 potato chips, 2 pretzels, and two corn chips (exact variety may change per pack).

1.4.1.1. (AP) Assorted Pack / Mixed Pack/Setpack:

All components of the pack typically have their own separate scannable bar codes physically attached.

- **Example 1**– consumable pack (also described as a bundle pack) – Acme sells a bundle pack consisting of three canisters of potato chips. Each canister is a different flavour. The bundle pack has an overwrap that has a unique bar code that represents the three pack. The canisters that are the components of the bundle pack are physically bar coded with the GTIN that represents a single canister for each different flavour.
- **Example 2** – non-consumable pack (most commonly described as a shrinkwrap or inner pack) Acme shampoo companies packs six of its 500 ml shampoo bottles, each with a unique GTIN to represent a different scent, in a non-bar coded plastic overwrap, and then packs three of these 6 packs into a standard cardboard container

1.4.1.2. (PK) Pack:

All components of the pack typically have their own separate scannable bar codes physically attached.

- **Example 1**– consumable pack (also described as a bundle pack) – Acme sells a bundle pack consisting of three of the same canisters of potato chips. The bundle pack has an overwrap that has a unique bar code that represents the three pack. The canisters that are the components of the bundle pack are physically bar coded with the GTIN that represents a single canister.
- **Example 2** – non-consumable pack (most commonly described as a shrinkwrap or inner pack) Acme shampoo companies packs six of its 500 ml shampoo bottles in a non-bar coded plastic overwrap, and then packs three of these 6 packs into a standard cardboard container.
- **Example 3** – three of the same size and colour tee shirts that are normally sold individually are overwrapped and carry a unique bar code that represents the three pack. Each tee shirt inside the bundles pack is in a poly bag that has a physical bar code representing each single tee shirt.
- **Example of a PK as a parent of a PK** – 3 bars of the same soap are overwrapped and have a unique bar code that represents the bundle pack (PK). 4 of these bundle packs are put in a shipping sleeve (PK) that is not barcoded, and two sleeves are packed in a case.

1.4.1.3. (CA) Case

- **Example 1** – Acme 1 litre orange juice bottles are packed in a standard 24-pack configuration within a cardboard case
- **Example 2** – Acme intravenous fluid bags are packed in a standard 12-pack configuration within a plastic returnable tote.
- **Example 3**– 24 eaches of a single hammers in one unit
- **Example 4** – 12 eaches of a single hat in one unit

1.4.1.4. (DS) Display / Shipper / Mixed Case/ Prepack

- **Example 1** – Acme distributors offers their five best selling products in a ready to set up cardboard display which is designed to be set up at store entrances.
- **Example 2** – Acme Tea Company offers a variety pack of different flavours of their iced tea within the same shipping container. This mixed case can be used by retailers to stock their shelves, or offered directly to consumers for purchase.

- **Example 3** – a counter top display of lipsticks and nail polish
- **Example 4** – 10 small, 20 medium and 20 large white tee shirts are packed in one case.

1.4.1.5. (PL) Pallet:

- **Example 1** – While buyers may order in smaller quantities if they wish, Seller offers its Acme soap powder in standardized pallet quantities of 100 cases 10 TI/10 HI per pallet which optimizes their logistical efficiency.
- **Example 2** – Acme dairy offers its 1-gallon milk containers in a standardized roll cart fixture that contains 96 gallons.

1.4.1.6. (MX) Mixed Mod

- **Example 1** – Manufacturer offers a configuration that consists of several of its related products; brooms, mops, brushes and cleansers as a “spring cleaning end cap”. Only one end cap fits on the shipping platform

1.4.1.7. (TL) Transport Load

Example 1 – A manufacturer may offer a shipping unit for transportation purposes. The product is manufactured overseas and the manufacturer communicates the Transport Load identifying 10,000 units will fit in a container which is assigned a GTIN as it is a standard configuration. The buyer may order in container quantities for transportation and logistical benefits.

1.5. Examples of Item Hierarchies

1.5.1. Example 1

PALLET that contains a child GTIN of BASE_UNIT_OR_EACH

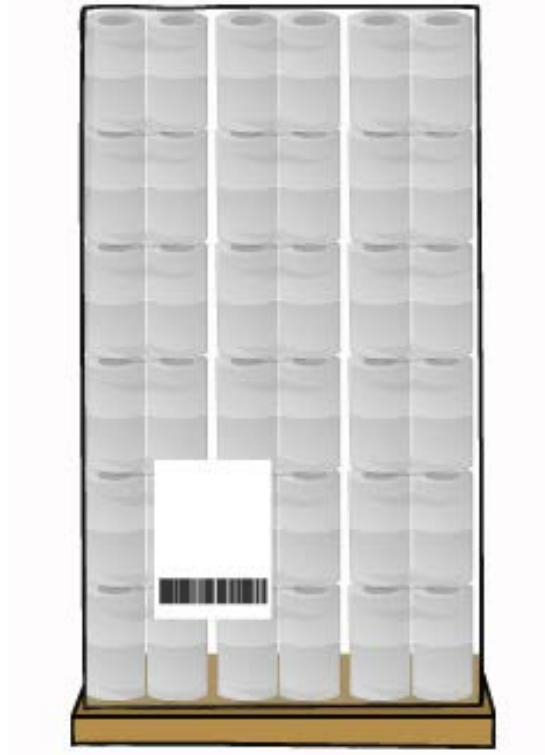
Assumption: A unit load that is not “display ready” and contains a single instance of an each.

Table 1-2 Trade Item Unit Descriptors Example 1

tradeItemUnit Descriptor	Description	GTIN	tradeItemIdentificationOfNextLowerLevelTradeItem (GTIN)	quantityOfNextLowerLevelTradeItem	quantityOfChildren (different GTIN)
PL	72 kitchen paper packets	13133200112618	03133200112611	72	1
EA	Kitchen paper packet	03133200112611	X	X	X

X = not applicable

Figure 1-1 Trade Item Unit Descriptors Example 1



1.5.2. Example 2

PALLET that contains a child **GTIN** of **CASE** that contains a Child **GTIN** of **BASE_UNIT_OR_EACH**

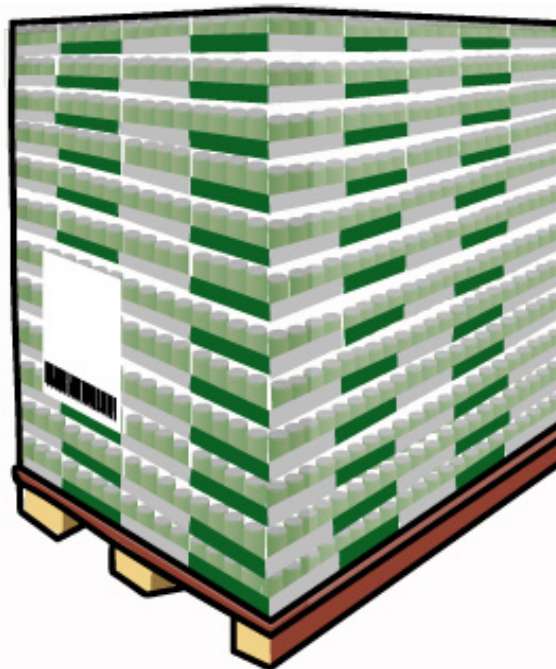
Assumption: A unit load that is not “display ready” and contains a single instance of a case. The case contains a single instance of an each.

Table 1-3 Trade Item Unit Descriptors Example 2

tradeItemUnitDescriptor	Description	GTIN	tradeItemIdentificationOfNextLowerLevelTradeItem (GTIN)	quantityOfNextLowerLevelTradeItem	quantityOfChildren (different GTIN)
PL	240 Cases	23041090004821	13041090004824	240	1
CA	12 jars of baby food	13041090004824	03041090004827	12	1
EA	1 jar of baby food	03041090004827	X	X	X

X = not applicable

Figure 1-2 Trade Item Unit Descriptors Example 2



1.5.3. Example 3

PALLET that contains a child GTIN of **CASE (1/2 pallet)** that contains a Child GTIN of **BASE_UNIT_OR_EACH**

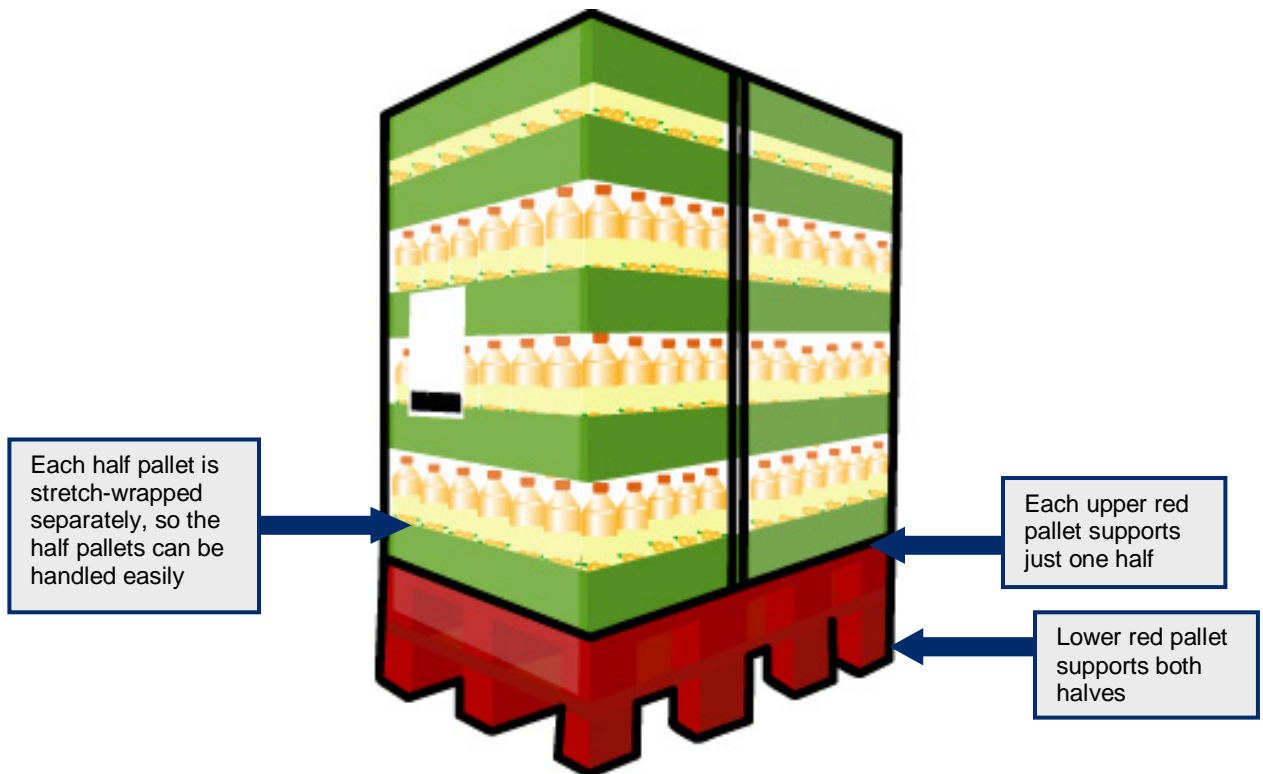
Assumption: a Unit load that contains two 1/2 pallets that are wrapped and shipped as one unit. Case (1/2 pallet) contains a single instance of an each.

Table 1-4 Trade Item Unit Descriptors Example 3

tradeItemUnitDescriptor	Description	GTIN	tradeItemIdentificationOfNextLowerLevelTradeItem (GTIN)	quantityOfNextLowerLevelTradeItem	quantityOfChildren (different GTIN)
PL	2 half pallets	13265474396026	13265474396019	2	1
CA (half pallet)	288 oil bottles	13265474396019	03265471024086	288	1
EA	1 oil bottle	03265471024086	X	X	X

X = not applicable

Figure 1-3 Trade Item Unit Descriptors Example 3



1.5.4. Example 4

PALLET that contains a child GTIN of **DISPLAY_SHIPPER** that contains a two unique child GTINs of **PACK_OR_INNER_PACK**. Each **PACK_OR_INNER_PACK** contains a single instance of a child GTIN of **BASE_UNIT_OR_EACH**.

Assumption: A unit load that is not “display ready” and contains a single instance of a display case. Display case contains multiple instances of a pack. Each Pack contains a single instance of an each.

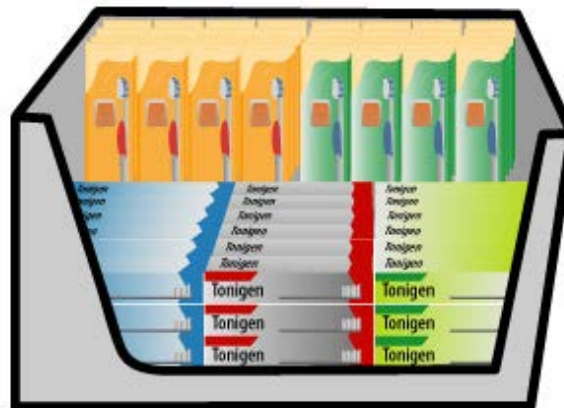
Table 1-5 Trade Item Unit Descriptors Example 4

tradeItemUnitDescriptor	Description	GTIN	tradeItemIdentificationOfNextLowerLevelTradeItem (GTIN)	quantityOfNextLowerLevelTradeItem	quantityOfChildren (different GTIN)
PL	8 display cases	08714789157818	08714789152516	8	1
DS	25 packs toothpaste A x 2 20 packs toothpaste B x 2 15 packs toothpaste C x 2 20 toothbrushes A 20 toothbrushes B	08714789152516	08714789121871 08714789121857 08714789121895 08714789110530 08714789110554	25 20 15 20 20	5
PK (Consumer Pack)	2 toothpaste A tubes	08714789121871	08714789119601	2	1
EA	Toothpaste A tube	08714789119601	X	X	X
PK (Consumer Pack)	2 toothpaste B tubes	08714789121857	08714789119625	2	1
EA	Toothpaste B tube	08714789119625	X	X	X
PK (Consumer Pack)	2 toothpaste C tubes	08714789121895	08714789119649	2	1
EA	Toothpaste C tube	08714789119649	X	X	X
EA	Toothbrush A	08714789110530	X	X	X
EA	Toothbrush B	08714789110554	X	X	X

X = not applicable

Note: [Figure 1-4](#) is the picture of the display shipper (DS) and the Pallet (PL) would contain a total quantity of 8.

Figure 1-4 Trade Item Unit Descriptors Example 4



1.5.5. Example 5

MIXED_MODULE that contains four unique child GTINs of **PACK_OR_INNER_PACK**. Each **PACK_OR_INNER_PACK** contains a single instance of a child GTIN of **BASE_UNIT_OR_EACH**.

Assumption: A unit load that is “display ready”.

Table 1-6 Trade Item Unit Descriptors Example 5

tradeItemUnitDescriptor	Description	GTIN	tradeItemIdentificationOfNextLowerLevelTradeItem (GTIN)	quantityOfNextLowerLevelTradeItem	quantityOfChildren (different GTIN)
MX	252 packs chocolate A x 5 100 packs chocolate B x 4 80 packs chocolate C x 4 80 packs chocolate D x 3	7622200996162	7622400900594 7622400931093 7622400931079 7622400968679	252 100 80 80	4
PK (Consumer Pack)	5 chocolate bars A	7622400900594	3045140105502	5	1
PK (Consumer Pack)	4 chocolate bars B	7622400931093	3045140280803	4	1
PK (Consumer Pack)	4 chocolate bars C	7622400931079	7622400893124	4	1
PK (Consumer Pack)	3 chocolate bars D	7622400968679	7622400730894	3	1
EA	Chocolate bar A	3045140105502	X	X	X
EA	Chocolate bar B	3045140280803	X	X	X
EA	Chocolate bar C	7622400893124	X	X	X
EA	Chocolate bar D	7622400730894	X	X	X

X = not applicable

Figure 1-5 Trade Item Unit Descriptors Example 5

