Bar coding variable measure trade items

A trade item must be considered a Variable Measure Trade Item if its measure is variable at any point in the supply chain.

1. Variable Measure Trade Items crossing a retail Point-of-sale (POS)

Variable Measure Trade Items are those sold in random quantity against a fixed price per unit quantity and intended to cross a Point-of-Sale, e.g., a meat, cheese, fruit, vegetables sold at a fixed price per kilogram.

These items are either marked in the store by the retailer or are marked at the source by the supplier.

Equipment is commercially available for automatically weighing items and printing the information as a bar code label. The scanning equipment and applications can then be programmed to use the prefix as an instruction to decode the ensuing data fields according to the particular structure adopted.

Trade items that are sold in discrete and pre-defined bands (e.g., as a nominal weight) are treated as Fixed Measure Trade Items. In this case each band should be allocated a standard fixed measure Global Trade Item Number (GTIN).

A product whose price is dependent on a measurement which is continuously variable cannot be identified using standard fixed measure GTINs (Global Trade Item Numbers).
For this purposes we have a standard national structure, which has its own reserved prefixes.

There are two ways of identifying variable measure retail trade items and these are described below.

1.1. Branded Variable Measure Retail Trade Items marked at the source by the supplier.

According to the GS1 General Specification GS1 Member Organizations should assign one or several of the GS1 Prefixes 02, 20 - 29 for the identification of Variable Measure Trade Items in their territory.

Latvian manufacturers (trademark owners) for sale in Latvia, Lithuania and Estonia can identify their variable quantity retail units using identification numbers starting with GS1 prefixes 23, 24 or 25.

Latvian manufacturers can identify branded variable measure items for trade in Latvia, Estonia and Lithuania by using a barcode number starting with the GS1 prefix 23,24,25.

If you wish to trade outside of the Baltic States, please contact our service team + 371 67830822 or +37127334458.

The variable weight product identification model approved by GS1 Latvia is formatted as follows:

GS1 Variable measure prefix	Company/Item reference number	Weight	Check digit	Example
23	NNNNNN	W,WWW	C	0,001 - 9,999 kg
24	NNNNNN	WW,WW	C	10,00 - 99,99 kg
25	NNNNNN	WWW,W	C	100,0 - 999,9 kg

GS1 Prefixes 23, 24, 25   - indicates the decimal point position within the barcode
NNNNNN   - company/item reference number provided by GS1 Latvia
WWWW   - weight in kilograms
C   - Check digit

Variable measure numbers with prefix 23, 24, 25 may only be constructed to this format and must never be used to identify fixed measure items. These numbers are always represented in EAN-13 barcodes.

Equipment is commercially available for automatically weighing items and printing the information in the form of an EAN-13 barcode label. Most commercial weighing equipment is pre-programmed with the standard variable measure number structures.

Example: Variable measure numbers encoded in a EAN-13 barcode

2 312345 600011

For GS1 Latvia Full Member companies allocation of variable measure company/item numbers for coding branded variable measure items are free-of-charge (included in the membership fee).

For foreign company if it is a Member of any GS1 national organization allocation of these numbers also is free-of-charge. Requests concerning the allocation of these numbers to foreign companies shall be processed through the local Member Organization. The "variable measure company/item numbers" are delivered to the local Member Organization and not directly to the foreign company.

1.2. Variable Measure Retail Trade Items marked in the store by the retailer

In Latvia, retailers can identify in-store variable measure retail trade items by using an identification number starting with the GS1 prefixes 02, 21, 22, 26, 27, 28 or 29. These are only unique and unambiguous within a closed environment, for example, a particular retail chain.

The in-store item reference is allocated by the retailer to the products he is responsible for coding.

2. Variable Measure Trade Items not crossing a retail Point-of-Sale (POS)

Variable measure trade items not crossing the retail point of sale (POS) must be identified with Global Trade Item Numbers (GTINs) for unrestricted circulation. These are items sold and distributed between trading partners. Examples includes:

- Items ordered in bulk (items sold by kilo such as cabbages, fruit; by length such as carpets or cables),
- Items sold by piece such as a round of cheese or a carcass of meat.
- Standardized composition of variable weight retail trade items, for example a box containing 10 chickens, a box containing 30 cheeses.

As with retail trade items, those items sold in discrete, pre-defined bands are treated as a series of different fixed-quantity items and should be identified accordingly.

A unique fourteen-digit number (GTVN-14) with the system indicator "9" followed by the measure of the product such as its weight or length is used to identify a variable measure item. The system indicator 9 is mandatory for use with variable measure 14-digit identification numbers, and acts as a prompt to the software to expect extra information about the item. The 14-digit number is created using the company's GS1 Company Prefix number (which begins with 475 if issued to company by GS1 Latvia) and allocating an item reference followed by a unique check digit.

To encode the identification number (GTIN) and the measure in a single symbol, the GS1-128 barcode is used, using Application Identifier (01) for the GTIN, and one of the AIs from (3100) to (3169), or AI (8001) for the measure.

Example of using GS1 Application Identifier to identify a Variable Measure Trade Item

Application Identifier (AI)	System Indicator	Company prefix number	Item reference	Check digit	Application identifier (AI)	Measure
01	9	475123456	001	1	3102	001156

Details of measurement Application Identifiers (AI) can be found in the GS1 General Specifications https://ref.gs1.org/standards/genspecs/

This example shows the product identification number for the quantity in kilograms, encoded in a GS1-128 barcode.

(01)94751234560011(3102)001156

The GTIN must be prefixed by the application identifier 01, and will have the format shown above.
In this example the variable measure **GTIN is 94751234560011** and the net weight in kilograms of the item is 11.56kg (represented by the application identifier 310N, where N shows the decimal position within the measurement field).

The unit of measure is always expressed by 6 digits determined by AI. The location of the decimal point is shown by the last AI digit (*X). If it is 0, then there is no decimal point, if it is 2, then there are two digits after the decimal point. For example, 001156 followed by AI (3102) means 11.56 kilograms.

Points to remember

- The system indicator of '9' must prompt systems to retrieve the measurement values held in the bar code
- 14-digit variable measure identification numbers not crossing the retail point of sale must be held as 14 digit numbers in the database. The '9' is an integral part of the number and must not be removed
- Variable measure application identifiers (except the ones for quantity) are normally four digits in length, with the fourth digit being the decimal point indicator
- The measurement application identifiers contain an indication of the decimal point position which must be inserted into the number when held in a database
- Retail variable weight numbers are shown in EAN-13 bar codes.
- Non-retail items must be bar coded with GS1-128 bar codes that can encode the additional information required.

The full specifications for numbering and symbol marking variable weight trade items are contained in the GS1 General Specifications

Examples

(source: GS1 General Specification and GS1 UK)

Example 1: Items traded in bulk – cabbages

A GTIN, for example, 94751234560028, will be allocated to the traded unit, in this case, cabbages sold by the kilogram. An order is made for 100 kilos of cabbages that will be delivered in two cases. Each case will be identified by the GTIN of the cabbage followed by the net weight of the items contained, as follows:

Case 1: (01) 94751234560028 (3101)000427
Case 2: (01) 94751234560028 (3101)000576

Once at the retail store, the cabbages will be sold to the customer by weight depending on the amount that is purchased, and identified with a RCN commencing with 02, 27, 28, 29 (retailer assigned prefixes). If the retailer decides to offer a bag of six cabbages to the customer at a fixed price, then the item is considered a fixed measure item and will be identified with fixed measure GTIN.

Example 2: Items traded in bulk – cable

A GTIN, for example 94751234560042, is allocated to the cable sold by the meters. An order is made for 150 meters of cable that will be delivered in an outer case. The case will be identified with the variable measure GTIN and the length of the cable, as follows:

(01) 94751234560042 (3110) 000150

Example 3: Items ordered and delivered by piece and invoiced by weight – a whole cheese

A single whole cheese is identified with the GTIN 94751234560073. An order is made for four whole cheeses that have a total weight of 10.2 kilos. The cheeses are placed in an outer case (identified by the GTIN 94751234560080 with the following information in the bar code:

(01) 94751234560080 (3101)000102 (30)04

Once at the retail store, the individual cheese may be sold whole at a fixed price or sold by weight, cut to order at a delicatessen counter (identified with a GS1 number beginning with), or cut and sold to the customer in pre-packed quantities (identified with a number beginning with 02, 27,28, 29).

Example 4: Pre-portioned trade items, pre-packed for sale by weight to the consumer – sliced chicken

The manufacturer will use the RCN (restricted circulation number) commencing with 23, 24, and assign an item reference to the product of sliced poultry sold at 3.60 Eur per kilo (for example 23 123125 for sliced chicken at 3,60 Eur per kilo, and 23 123116 for premium sliced chicken at 6,50 Eur per kilo). Each pack varies in weight and therefore the individual packs would be sold at different prices for the customer. For example: the bar code encoding the number 23 123125 0259 1 is identifying a piece of the 0,259 kg sliced chicken.

Example 5: Standardized composition of a fixed number of variable measure trade items

The manufacturer offers for sale one case of 50 portioned packets of sliced chicken at a certain price per kilogram. The GTIN assigned to the standard case is 94751234560103. An order is made for two cases. The weight of each case will differ so the bar codes that include their net weight will be different. When the items are dispatched and received, the weights will be recorded so that the invoicing can be carried out correctly. The GS1-128 bar codes on the outer cases are as follows and they provide the information that the first one's net weight is 4.15 kilograms and the second's is 4.07 kilograms:

Case 1: (01) 94751234560103 (3102)000415
Case 2: (01) 94751234560103 (3102)000407

Further information:

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