



The Global Language of Business

# Global Product Classification (GPC) Development & Implementation Guide

Reference document which provides an overview of GPC along with its fundamentals & principles, rules, and relationship to other standards and services.

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# 1 Introduction

The purpose of the Global Product Classification (GPC) Development & Implementation Guide is to provide a reference document for GPC development and implementation. It provides an overview of GPC along with its fundamentals, principles, and rules.

# 2 GPC Overview

GS1 Global Product Classification (GPC) is a system that allows trading partners to communicate more efficiently through their supply chain and offers a universal set of rules to allow manufactures and retailers to use the same terminology for grouping products in their catalogues. It ensures that products are classified correctly and uniformly, everywhere in the world. The term "product" as used throughout this guide refers mainly to physical products; however, GPC expanded into services as well. The GPC Standard is maintained in the GSMP GPC SMG and is updated two times per year.

### The business objectives of the GPC Standard are to:

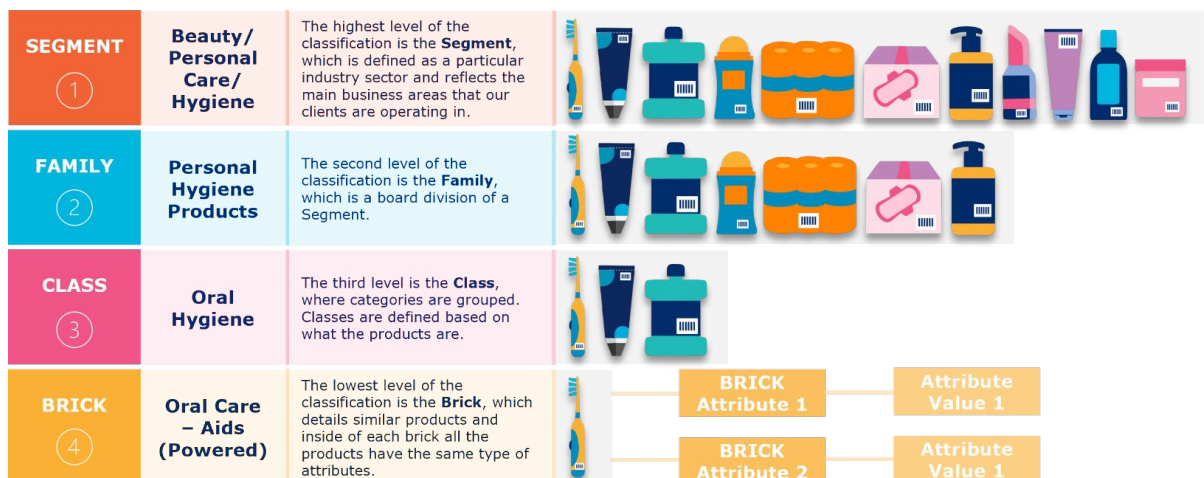
- Support buying programs by allowing buyers to pre-select groups of applicable products.
- Provide a common language for category management, thus speeding up reaction to consumer needs.
- Be a key enabler of the Global Data Synchronisation Network, Verified by GS1 and Activate services.
- To be a pivotal classification system between the information exchange parties.

## 2.1 How it Works

GPC is a rules-based, four-tier classification system for grouping products. The four tiers are Segment, Family, Class, and Brick (with attributes and attribute values). A Brick identifies a category incorporating products (Global Trade Item Numbers (GTINs)) that serve a common purpose, are of a similar form and material, and share the same set of category attributes.

## 2.2 GPC Foundations

The foundation of GPC is called a "Brick". GPC bricks define categories of similar products. Using the GPC brick ensures the correct recognition of the product category across the extended supply chain, from seller to buyer. Bricks can be further characterised by Brick Attributes and Attribute Values.



**Figure 2-1** GPC Foundation and Hierarchy

**Important:** Each Global Trade Item Number (GTIN) can be assigned only one Brick.



Figure 2-2 GTIN / Brick Assignment

### Using Attributes

Bricks can be further characterised using attributes where necessary.

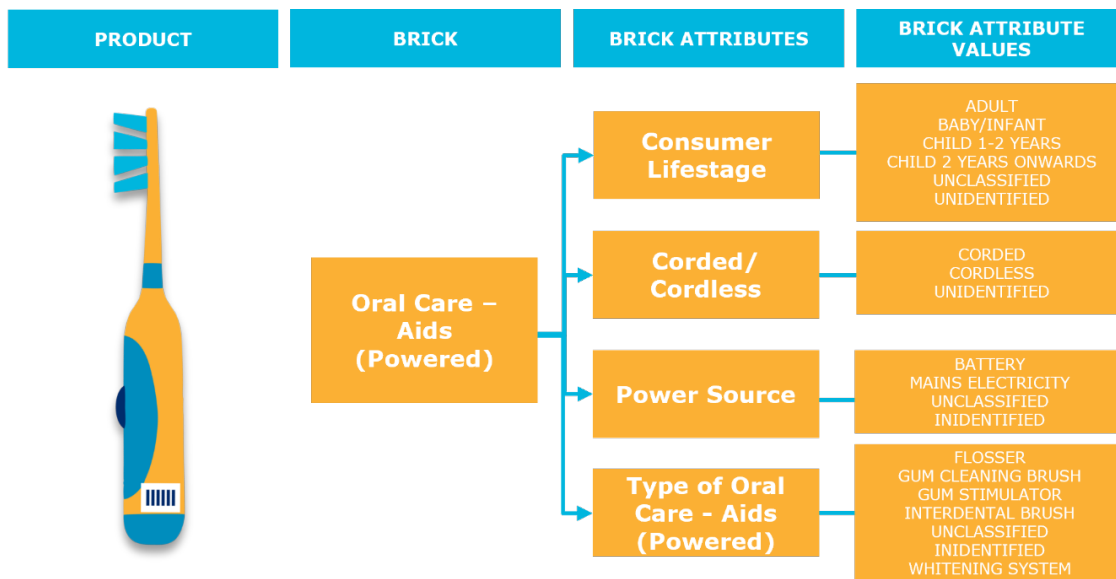


Figure 2-3 GPC Brick Attributes

## 2.3 GPC Schema

The GPC Schema is organised with the aim to establish a flexible product classification schema, based on a comprehensive set of rules. The GPC schema hierarchy (Segment, Family, Class, and Brick) provides a coherent, logical, and intuitive grouping that can be used to classify comparable products in a global environment. GPC incorporates generic building blocks that transcend different business practices and multi-cultural barriers. It serves business-to-business needs for the functions of search, viewing, publication or subscription and data synchronisation through product group alignment.

## 3 GPC Fundamentals & Principles

### 3.1 General Principles

1. Modularity and Flexibility of the classification structure in order to meet industry objectives.
2. The logical grouping of bricks. The logic behind the schema should be transparent.
3. All categorized information must be universally applicable, i.e., the terminology used in the schema should not be culturally or nationally biased.
4. The schema is initially published in Oxford English with an explanatory glossary, which helps to clarify specific terms.
5. Schema should facilitate the collection of relevant classification information and allow it to be presented in a view acceptable by the industry.
6. The schema shall have the ability to cover all products and is actively in the state of development to maintain market relevance.
7. Any changes to the classification schema will be communicated in a delta report.
8. The level of development will depend on the need of industry.

### 3.2 Schema Principles

1. The GPC schema provides an optional four-tier hierarchy; segment, family, class, and brick (GPC bricks may be used independently without the hierarchy). The hierarchy should be easy to understand/follow and balanced in order to facilitate search.
2. Each level of the schema is determined by rules and/or principles, and also industry decision. However, the rules applied differ depending on the hierarchy level.
3. The business rules apply to all levels or entities of the schema.
4. Each brick may be assigned one or more attributes; in turn each brick attribute has a set of associated mutually exclusive brick attribute values. The number of attributes assigned must be manageable and limited to 25 attributes per brick.
5. Resulting bricks shall be grouped by identity (establish or indicate what the product is) and not by intended use (use for which a product is intended according to the specifications, instructions and information provided by the manufacturer).

### 3.3 Generic Business Rules

1. Application of clear and consistent structuring within each sector.
2. Use of non-culturally biased terms and spellings.
3. Application of a standardised naming convention.
4. Ensuring that each segment, family, class and brick has the necessary coverage and scope, with the ability to add appropriate new values as identified.
5. Avoid ambiguity by using clear wording and concise definitions.
6. Provide a generic and standardised schema by ensuring that all products/services are uniquely placed.
7. A brick must, as far as is practical, contain products that can be characterised by the same set of attribute types relevant to the product. These attributes must meet the GPC attribute rules and be part of the global standards. Where it is deemed not practical, the split of the product sets will be determined by industry input in accordance with [GPC rules](#).
8. Products that are grouped and sold together (excluding kits) will be classified as variety packs. This applies to the segment, family, and class level of the hierarchy. Variety Packs should only be created where necessary.
9. The schema will allow for the creation of a class-specific brick to capture products that cannot be



immediately placed into an existing brick or products that the industry determines should not be broken out. These bricks are called 'Others'.

10. Group products based on what they physically are and not on their intended use.

### 3.4 Hierarchy Principles

1. Globally applicable, hence not biased towards a region, culture, or country.
2. No ambiguity in any terms/words used.
3. Categorised information must be recognised globally.
4. Hierarchy groupings must be relevant and suitable for all search functionalities.
5. Hierarchy classification must be flexible.
6. The hierarchy should be created describing the characteristics of products (what they are) and not which channel / vertical they will be sold in or by intended use (how they are used). This will ensure products that are available in different channels / verticals can be classified and identified easily.

### 3.5 Brick Principles

The rules below are the comprehensive lists that have been used for bricks across verticals. These rules are not 'general' in the sense that they are not appropriate for all segments. They should be used where they are relevant.

- Broad area of application.
- Products/services with a brick serve a common purpose and use.
- Products that have similar Processing Methods.
- Split between powered vs. manual products.
- Replacement parts will be classified in one brick per class.
- Storage and Preservation.
- Variety Packs.
- When creating brick its acceptable to create an optional "other" brick for products that the industry determines should not be broken out.
- Share the same attribute types and are further characterised by definitions, attributes, and their values.
- Mutually exclusive and unique placement of a GTIN.
- Should be single, comprehensive, and mutually exclusive code list.
- Brick names should be broad and stable over time.



**Note:** To identify the appropriate rules by vertical and their explanation, please refer to Section 10.

### 3.6 Attribute Principles

1. Globally applicable.
2. Relevant, recognised, and understandable to users and industry (What benefit is it providing?).
3. Unique (intention, format, technicalities), objective and mutually exclusive – Includes both attributes and their values.
4. Non-legislation specific. It is a piece of information required globally but will be governed / legislated for locally (i.e., If Organic, Food Quality/Food Assurance Claims etc.).
5. Should be single, comprehensive, and mutually exclusive code list.
6. All GPC Attributes will be described to show what information they are seeking to identify. No Brick Variant will be used.

7. An attribute should be category specific to allow the comparison of similar products (example – coffee pods could have different attributes than coffee grounds).

## 4 GPC Rules

### 4.1 Rules for Assessing

A clear and unambiguous understanding of classification is critical for the development and maintenance of a coherent classification system. Within the fields of electronic catalogues and data synchronisation there is confusion due to differences in terminology (e.g., property = attribute) or different understandings of concepts like identification, description, and classification. Typical terms that can cause misunderstanding when not precisely defined include ontology, taxonomy, classification system, data dictionary, vocabulary, thesaurus, characteristics, property, attribute, and feature.

Recommendations below relating to these terms and definitions do not imply that the other terms and definitions are erroneous or inferior. This section seeks to establish a consistent vocabulary for supporting the GPC and recognises that other terms may be equally valid in the same or a slightly different context.

#### 4.1.1 Overview

In a typical product catalogue, there are fields that:

##### 1. Identify with keys:

- A product with a GTIN (Which product am I selling?)
- Manufacturer / vendor / supplier with a GLN (Who am I?)
- Target Market where a GTIN is for sale (TM) (Where do I sell my product?)

##### 2. Further describe a product with Item attribute fields:

- Brand Name
- Dimensions (height, length, width etc.)
- Weight (net weight, gross weight etc.)
- Technical features
- Marketing features
- Price

##### 3. Classify products

- Using GPC Brick Code as a key where each GTIN should be assigned to a GPC Brick code (What is the product group my individual product belongs to?).
- Classification provides further properties of the product group (Brick) with Brick Attributes and Brick Attribute Values.



**Note:** There should be NO FUNCTIONAL OVERLAP between Trade Item Attribute values and GPC Brick Attribute Values. Although both may pertain to the same product property, the Trade Item Attribute describes the product (e.g., Organic Code = “100% Organic”) while the GPC Brick Attribute classifies that product using that same product property (e.g., If Organic = “Yes”).

- GTIN as a single product key is linked with GPC Brick code as a category (product group) level key.

- Trade Item Attribute can be used to define as many technical or marketing features as industry wishes without any theoretical limit. However, Brick Attributes must be applicable to all products assigned to that brick.
- Trade Item Attribute are not to be confused with GPC Brick Attributes. The goal of a Trade Item Attribute is to describe the product as a commercial offering. The goal of a GPC Brick Attribute is to establish a flexible global classification schema based on a comprehensive rule set that serves business-to-business needs for the functions of search, view, publication, subscription, mapping, and data synchronisation.
- Trade Item Attributes may support more than one value, whereas a GPC Brick supports one and only one value.

#### 4.1.2 Identification Codes, Product Description, Classification Description and Definition

##### Identification Codes


Identification codes are the keys used to unambiguously identify a single specific item (in general). A common example is product identification using the GTIN. The one-to-one correspondence between the GTIN and the single product is very useful for recording and linking records of single products.

##### Product Description

The identification keys alone are not enough sufficient to provide the necessary details of the individual products. A set of data describes the specifications and structure of each single product. This is performed by a single product description where values are assigned to trade item attributes for each product.

##### Classification Description

Product group characterization is assigning a product to a defined product category that groups similar products together based on common properties. Products are assigned to categories using a unique GPC brick code.

- 
**Note:** Product description and product characterization both use properties, but with a different goal (description accurately denotes the properties of the product, while characterization denotes the properties of the category 'Brick' to which that product is assigned).

For each Brick, associated Brick Attributes and Brick Attribute Values are used to more granularly characterize products assigned to that Brick.

##### Classification Definition

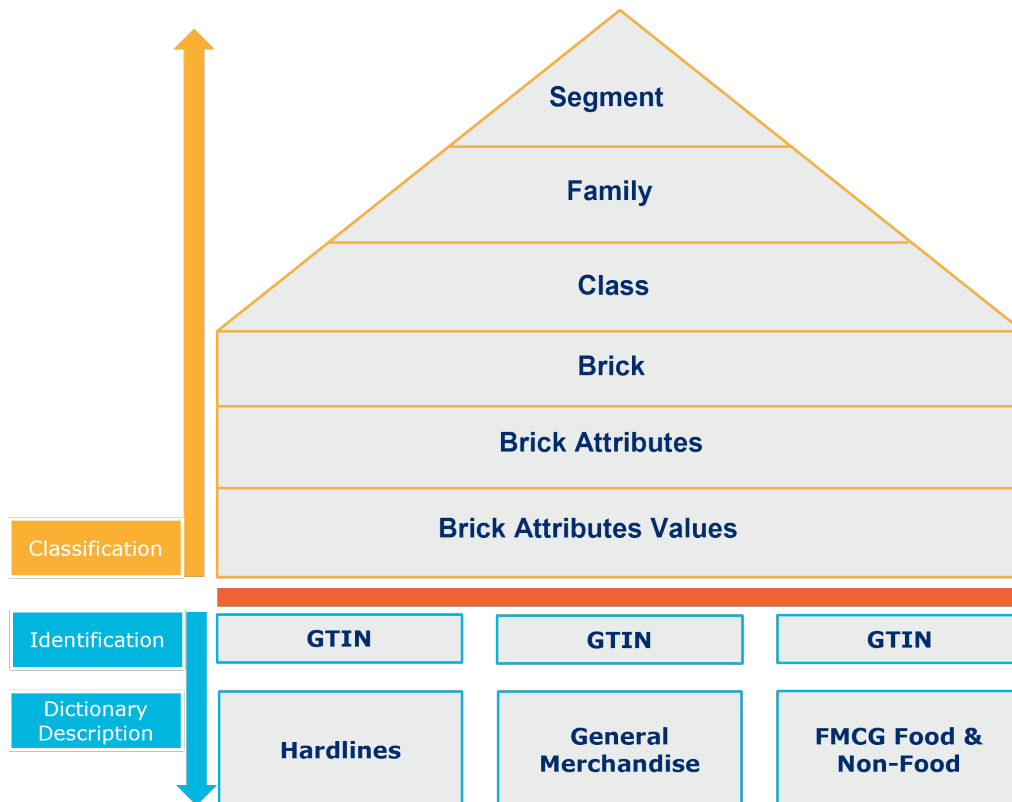
With classification, similar products are assigned to a defined product category. This is achieved by assigning a brick code to each product. Similar groups are members of yet a more general higher-level category, and so on. This hierarchy can be navigated from top to bottom or bottom to top. The relationship of a single product to each hierarchy level is an information signal that is necessary for Item Discovery, Spend Analysis, and Product Awareness.

In other words, both classification categories, represented by brick codes, and a hierarchical tree structure are useful for effectively searching and finding products and services with similar properties, which allows the source of expenditures to be tracked and potential trading partners to find products of interest to their buyers.

#### 4.1.3 Commonalities and Differences

The upper part of [Figure 4-1](#) (above the orange line) illustrates the product classification components.

- GPC Brick Code is the key to defining the essential characteristics of a product by assigning it to a product category.
- Brick Attributes and Brick Attribute Values provide additional granularity by further defining smaller subgroups within the Brick.
- Segment, Family and Class are hierarchal elements that are used to group together common bricks.
- The lower part of [Figure 4-1](#) (below the orange line) highlights the individual product level data.
- GTIN identifies the single product.
- GS1 Dictionary Description (GS1 GDD) describes the different individual product characteristics of a Trade Item.
- Item Attributes can be broken down to:
  - Basic Data (like Brand Name, Dimensions, and Weight etc.)
  - Descriptive (like Colour, Product Description, Variant etc.)
  - Other (like manufacturer’s internal (not public) data)



**Figure 4-1** Commonalities and Differences

**Product Identification and Description versus Product Classification**



GTIN acts as a single product identification key and uniquely identifies a single product. There is a one- to-one relationship between the single product and the GTIN. Therefore, identification codes can neither be aggregated nor used for reporting or category analysis purposes and do not allow comparisons among different manufacturers. In a typical catalogue, suppliers identify the GTIN, GLN and also describe products with additional components called Trade Item Attributes.

Product Classification keys (GPC Brick Code) are used to group similar products into common categories. A key property of classifications is that such groups can be clustered (bottom up) with others to create a hierarchy, i.e., any group within a classification can be divided into smaller groups based on common characteristics (top down).

Classification with GPC is the act of saying: "This product belongs to this Brick, this Brick has hierarchy components (Segment, Family and Class), and this Brick can be further described with a Brick Attribute set and the associated Brick Attribute Values".

GPC is a structure for product classification (process of categorizing products into organized groups based on their attributes), not individual product identification (GTIN) or description (dictionary). In other words, GPC provides a way to group similar products and provides a hierarchical relationship between them rather than describe an individual product (which is handled by the trade item attributes).

**Differences between Single Product and Product Classification**

	<b>Single Product</b>	<b>Category (Product Group)</b>
		
<b>Key</b>	GTIN <ul style="list-style-type: none"> <li>• 14-digit, non-negative integer, check digit</li> <li>• e.g., 123456789123C</li> </ul>	GPC Brick Code <ul style="list-style-type: none"> <li>• 8-digit, non-negative integer</li> <li>• e.g., 10000384 [=Oral Care – Aids (Non Powered)]</li> <li>• Multiple GTINs assigned to one Brick</li> </ul>
<b>Purpose</b>	<ul style="list-style-type: none"> <li>• Single Product Identification</li> <li>• Identifies an individual trade item</li> <li>• Tracking and tracing</li> <li>• Record keeping</li> </ul>	<ul style="list-style-type: none"> <li>• Category (Product Group) Identification</li> <li>• Identifies the category incorporating multiple trade items that share the same set of attributes</li> <li>• Finding groups of products</li> <li>• Comparing and benchmarking</li> </ul>
<b>Relation</b>	<ul style="list-style-type: none"> <li>• One-to-one relationship between GTIN and the product.</li> <li>• GTIN is linked to the GPC Brick Code i.e. each GTIN can only be assigned to one Brick code</li> </ul>	<ul style="list-style-type: none"> <li>• Linked to the other hierarchy elements of which the Brick is a member together with Segment, Family and Class.               <ul style="list-style-type: none"> <li>• Brick = 10000384 Oral Care - Aids (Non Powered)</li> <li>• Class = 53181500 Oral Hygiene</li> <li>• Family = 53180000 Personal Hygiene</li> <li>• Segment = 53000000 Beauty/Personal Care/Hygiene</li> </ul> </li> </ul>

**Table 4-1** GTIN vs Brick (Category)

**4.1.4 GPC Structure**

**GPC Coding:**

- All numbers are 8-digit, non-negative integers
- Unique codes for classifying each product at a brick level
- Constant (deleted bricks are not reassigned)
- Brick codes always start with '1'
- Brick Attribute codes always start with '2'
- Brick Attribute Value codes always start with '3'
- Temporary GPC Brick Code: '99999999'

This brick code is used for products that cannot be classified within the GS1 Global Product Classification schema. It serves as a temporary holding place for products, which cannot be

classified within the current segments of the schema due to its current evolution. It excludes all products that can be classified within the published GS1 Global Product Classification Schema.

**Important:** If you are in a country that does not allow the temporary Brick '99999999', the following classification rules should be applied:

**1. Use the Brick 'Other' within the same class**

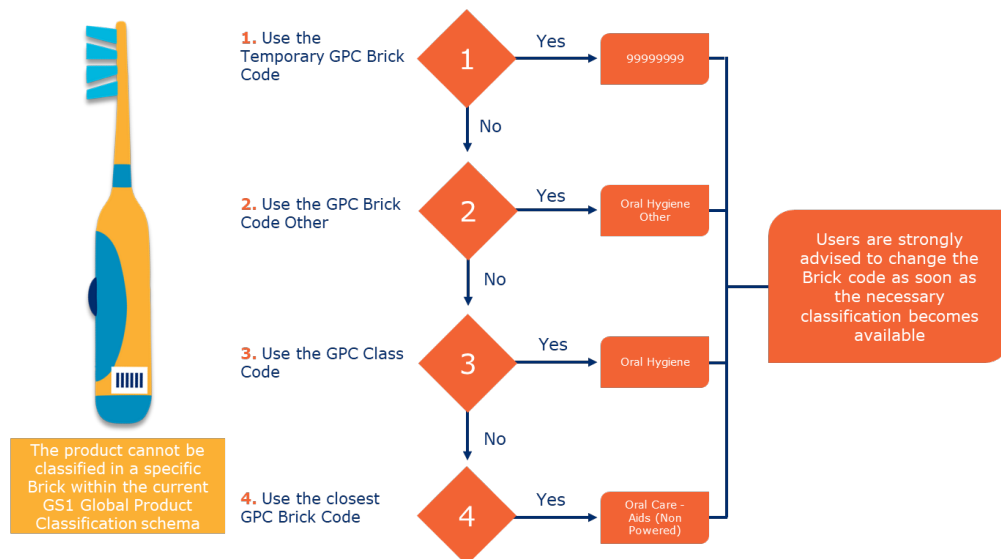
Example: if the product belongs to the class Oral Hygiene but it doesn't apply to any of the existing bricks, the brick 'Oral Hygiene Other' should be used until the necessary classification becomes available.

**2. Use the level up in the hierarchy.** If the Brick 'Other' in a specific class is not available, use the level Class to classify the product:

Example: if the product belongs to the Oral Hygiene class, but it doesn't apply to any of the existing bricks and the brick 'Oral Hygiene Other' doesn't exist, the class 'Oral Hygiene' should be used until the necessary classification becomes available.

**3. Use the Brick that comes the closest.** If the Brick 'Other' in a specific class is not available and the Class level cannot be used due to country specificities, use the Brick code that comes the closest in terms of definition and products included:

Example: if the product is a powered toothbrush and the brick doesn't exist nor the class level can be used, use the brick toothbrush (which is the closest one in terms of definition and products included) until the necessary classification becomes available.



**Figure 4-2** Decision Tree for Temporary Bricks

**4.1.5 Brick Attribute vs. Trade Item Attribute**

**What is an Attribute?**

In the Product Description world, Attribute is a term reflecting the data elements of a data model. An attribute is a specification feature or characteristic that describes recognizably the physical, compositional, or structural properties of a particular product (single product attribute) or a product group (Brick Attribute).

## Classification (Brick) Attribute

For each Brick the associated Brick Attributes and Brick Attribute Values describe the Brick to provide granularity.

### What are the components of the Brick Attributes?

- Brick Attribute – a question with regards to the Brick.
- Brick Attribute Value – a pick list

For example:

If Organic (Is the product group claiming to be organic or not?).

- Yes' (the product group is claiming to be organic),
- 'No' (the product group is not claiming to be organic) or
- 'Unidentified' (It cannot be determined as to whether the product group is claiming to be organic or not.)

### Trade Item Data Model

Use the specified attributes relating to a single product as a communication template for trading partners. The goal is to build data sets for all kind of products.

The single product attribute is a characteristic of the product that is used to describe the commercial offer to the retailer. Trade Item Data Model establishes a framework that is applicable to any parties within the supply chain (i.e. supplier, retailers, exchange, consumer, etc. across the globe, to communicate the necessary data elements relating to an item, thus supporting the core business requirements in the global trading environment).

The Trade Item data model has 'placeholders / fields' for communicating the relevant classification schema (properties) that relates to the product concerned. However, the schema is a separate entity to that of the item model, the relationship is that the product's Brick and subsequent Brick Attributes are communicated in this framework.

#### 4.1.6 Brick Attribute Rules

- Brick Attributes must be globally applicable and not biased towards a region, culture or country.
- Brick Attributes must be recognised, understandable and relevant to the industry, in terms of product classification.
- Brick Attributes must be unique (intention, format, technicalities), objective and mutually exclusive – includes both Brick Attribute and their Brick Attribute Value choices.
- Brick Attributes must be based on objective logic and must not be subjective or emotive – An example of a non-classification attribute would be a marketing view (e.g., Indulgence).
- Brick Attributes must not relate to global, regional, or local legislation requirements. It is a piece of information required globally, but will be governed / legislated locally (e.g., If Organic, Food Quality / Food Assurance Claims).
- Brick Attributes must be standardised in terms of naming.
- High-level attribute. The best method for collection is not necessarily how the user would publish (i.e., the ideal method of collection may require more granularity).
- Single, comprehensive, and exhaustive code list.
- No ambiguity in any terms / words used.
- All Brick Attributes and Brick Attribute Values will be defined to show what information they are seeking to identify.
- No Brick variant will be used.

- Brick Attributes should refer to high-level classification (Brick) attributes of product groups rather than describing the individual product concerned – an example of a non-classification attribute would be Brand, as it relates specifically to an individual or small group of products.

#### 4.1.7 Brick Attribute Values

- Normalised value pick list. Only one Brick Attribute Value per Brick Attribute could be populated per each Brick.
- Brick Attributes must contain a default value in cases of limited information or non-applicability – unclassified and/or unidentified.
- Brick Attributes must possess a single comprehensive and exhaustive code list.
- Brick Attribute Values must be managed and maintained by the GPC Standards Maintenance Group (SMG).
- Brick Attribute Values should be mutually exclusive, and values must be uniquely defined.
- There should be no abbreviations within Brick Attribute Values.
- Brick Attribute Values should be in alphabetical order and created based on key words.
- Contentious terms or words used as a value or within a value must be added to the glossary, along with a concise definition.

#### 4.1.8 Trade Item Model Attribute

- Single product attributes can be globally, regionally, or locally applicable and in some cases will be biased towards a region, culture or country.
- Single product attributes can be applicable to all industries (core) or applicable to one or more industries (extension).
- Single product attributes may be recognisable and understandable to selected users. However, it must be relevant to the industry, in terms of data synchronisation and apparent legacy harmonisation/normalisation. To support the core business requirements in the global trading environment.
- Single product attributes can be subjective and emotive. For example, Brand in some cases is a subjective attribute.
- Single product attributes can be in a free text format; each individual user determines value population for the field, a code list is not used in these cases.
- Single product attributes typically relate to legislative requirements of a specific region or country, which may or may not be relevant to a given user.
- Single product attributes may refer to more than one code list (i.e., colour description or Dangerous Goods).
- Single product attributes are intended to describe an individual product rather than a generic grouping or range of products, as is done by classification.

#### 4.1.9 Trade Item Attribute Values

- Various types from free text to codes and dates.
- Single product attribute values may not be mutually exclusive.
- Single product attributes do not have default values if an answer cannot be given to a specific single product attribute, whereas within classification there is the option of unclassified and unidentified as Brick Attribute Values.
- Single product attribute value may be in certain cases managed and maintained by another standards organisation (e.g., ISO).



### 4.1.10 Work Request (WR) Assessment

When a GS1 Work Request (WR) involving an attribute is received, it is evaluated as to whether the attribute is a part of the Trade Item or part of the GPC Brick. A specific set of rules determines this split. A series of questions is applied to each GPC WR with the following results:

- If 'Yes' is answered to ALL the questions – the request is processed as a GPC Attribute which is contained in the GPC Schema and Online Browser. These WRs are routed to the GPC SMG.
- If 'No' is answered to any ONE of the questions – the request is processed as a Trade Item Attribute which is contained in the GS1 Global Data Dictionary (GDD). These WRs are sent to Central Operations where they are routed to the appropriate SMG.

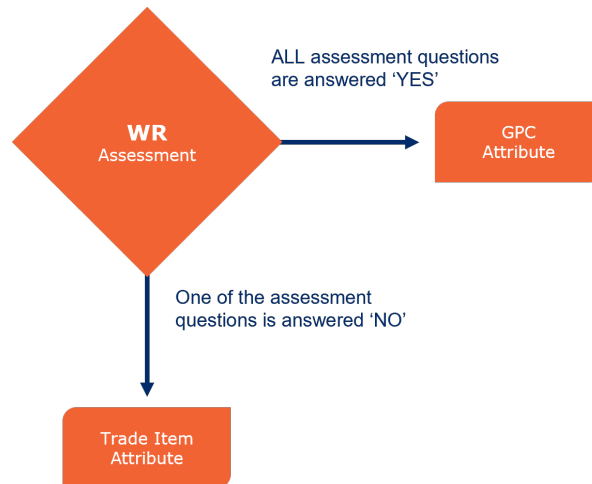


Figure 4-3 Attribute Assessment

#### Attribute Assessment Questions:

1. **Globally applicable?** Attributes that are regional or local need to be supported by the Item Model.
2. **Relevant to users and industry?** Attributes must be recognized, understandable and relevant to the industry, in terms of product classification.
3. **Unique, objective and mutually exclusive?** The attributes must be unique in terms of intention and result, whereas and there is room for overlap and misinterpretation. Attributes also must be based on objective logic rather than based of subjectivity or emotion.
4. **Non-legislation specific?** The attributes within classification must not bear any relationship to that of legal requirements if they do must be placed within the Item Model.
5. **High-level attributes?** The attributes intention and result within classification should be based on high level attributes and groupings that are a key criterion that a user would search, view and publish products.

Can it be part of a single, comprehensive, and exhaustive code list? The attributes within classification must have a single, comprehensive, and mutually exclusive code list / pick list of values that provide an answer to the question being asked. Duplicate values within the same attribute are prohibited; the same applies to abbreviated values. Each code list must contain either unclassified (value known but not defined in code list) or unidentified (value unknown) and, if applicable, both. The code list is to be managed and maintained by the GPC Subject Matter Expert.

GPC Attribute or- Trade Item Attribute	Global?	Category Specific?	Granularity Relevant to the Industry?	Unique, Objective, Mutually Exclusive?	Non-legislation Specific?	Coded?	Code Value Pick List?
Brand Name	N	N	Y	N	Y	N	N
Trade Item Description	N	N	Y	N	Y	N	N

Height	Y	Y	Y	Y	Y	N	N
GTIN	Y	N	Y	Y	Y	Y	Y
GLN	Y	N	Y	Y	Y	Y	Y
Colour Description	N	N	N	Y	Y	Y	Y
<b>Colour of Wine</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>
Country of Origin	Y	N	N	Y	Y	Y	Y
<b>Origin of Wine</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>
Catalogue Price	N	N	Y	Y	Y	N	N
Organic Trade Item Code	N	Y	Y	N	N	Y	Y
<b>If Organic?</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>

**Table 4-2** Attribute Assessment Example

**According to Table 4-1, the Trade Item Attributes are:**

- Brand Name &** Not necessarily Global
- Trade Item Description:** Not necessarily Category Specific
  - Not unique (in terms of intention, format, and technicalities)
  - Not coded
  - No code value pick list
  - No glossary exists
- Height:**
  - Not coded
  - No coded value pick list
  - No glossary
- GTIN and GLN:**
  - Not Category Specific
  - No glossary
- Colour Description:**
  - Not necessarily Global
  - Not necessarily Category Specific
  - Not necessarily unique (in terms of intention, format, and technicalities)
- Country of Origin:**
  - Not Category Specific
  - Granularity not relevant to the industry
- Catalogue Price:**
  - Not necessarily Global
  - Not necessarily Category Specific
  - Not coded
  - No code value pick list
  - No glossary
- Organic Trade Item Code:**
  - Not Necessarily Global
- Code:**
  - Not unique (in terms of intention, format, and technicalities)
  - It can be legislation specific

No glossary

**According to Table 4-1, the GPC Brick Attributes are:**

- Colour of Wine:** Global
- Origin of Wine:** Category Specific
- If Organic:** Granularity Relevant to the Industry
  - Unique (in terms of intention, format, and technicalities), objective and mutually exclusive
  - Non-legislation specific (Relates to an organic claim/label in the product)
  - Coded with 8-digit non-negative integer codes
  - They all have 8-digit non-negative integer coded value pick list
  - Contentious terms of words used based upon a glossary

## 4.2 Rules for GPC Database

### 4.2.1 Schema Structure

The GPC schema is structured in a hierarchical format where the higher levels have control or precedence over the lower levels. Hierarchical structures are a one-to-many relationships; each level having one or more levels below it except the lowest level. Conversely, lower levels are aggregated into the level above.

The GPC schema has 4 levels in its hierarchy (Segment, Family, Class, and Brick) providing a coherent, logical, and intuitive grouping that can be used to classify comparable products in a global environment. Each level is governed by business rules and/or principles and is intended to aid search functionality by using standard naming conventions, non-culturally biased terms and spellings and ensuring unique placement of products within the schema. Each node within the schema is designated with a Code and Description pair. The Code provides a unique reference while the Description aids human readability.

Either the Code or Description can be used for searching, filtering, or referencing.

The lowest level in the hierarchy, a Brick, has a level beneath it called a Brick Attribute to which Brick Attribute Values are allocated. Brick Attributes or Values are not included in the hierarchy, as they cannot be aggregated to higher levels. Brick Attributes are only relevant to the Brick they are assigned to. Brick Attribute Values are only relevant to the Brick Attribute they are assigned to.

S(1)															S(n)	
F(1)							F(n)									
C(1)				C(n)				C(1)				C(n)				
B(1)		B(n)		B(1)		B(n)		B(1)		B(n)		B(1)		B(n)		
BA(1)	BA(n)	BA(1)	BA(n)	BA(1)	BA(n)	BA(1)	BA(n)	BA(1)	BA(n)	BA(1)	BA(n)	BA(1)	BA(n)	BA(1)	BA(n)	
BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	BAV(1..n)	

S = Segment, F = Family, C = Class, B = Brick, BA = Brick Attribute, BAV = Brick Attribute Value

Figure 4-4 Brick Attribute Example

### 4.2.2 Hierarchies

In order to understand the definitions for each level it is necessary to begin with Brick Attributes and then understand how these relate to the lowest level of the hierarchical structure, the Brick.

Brick Attribute and Brick Attribute Values – Classification is a structured method of assigning category (product group) information detail to items contained within a Brick. Each Brick Attribute is designed to represent a particular category feature of the products assigned to the same Brick. Brick

Attribute may be assigned to more than one Brick. Each Brick Attribute will have a set of unique, objective and mutually exclusive Brick Attribute Values associated with it.

- **Segment** - The first and highest level of the hierarchy is a logical grouping of Families sharing similar characteristics. The Families contained in a Segment are a logical and coherent aggregation.
- **Family** - The second level of the hierarchy is a logical grouping of Classes sharing similar characteristics. The Classes contained in a Family are a logical and coherent aggregation.
- **Class** - The third level of the hierarchy is a logical grouping of Bricks sharing similar characteristics. The Bricks contained in a Class are a logical and coherent aggregation.
- **Brick** - The fourth, lowest and most detailed level of the hierarchy is a logical grouping of similar products that conform to the Brick business rules. A Brick code is a classification key which contains a group of products that; serve a common purpose; are processed to similar methods; are used and applied in a similar manner; are of a similar form and material and, as far as practical, contain products that can be characterised by the same set of Brick Attributes relevant to the product. Thus, very specific groupings of products can be identified by the combination of a Brick and a collection of Brick Attributes with specific Brick Attribute Values.

Very specific groupings of products can thus be classified by the combination of a Brick and a collection of Brick Attributes with specific Brick Attribute Values. For example, the grouping of products in [Figure 4-5](#) is quite different to the grouping of products in [Figure 4-5](#), yet both can be aggregated into the same Class, Family, and Segment.

GPC Hierarchy	<b>Segment</b> Food/Beverage/Tobacco										
	<b>Family</b> Beverages										
	<b>Class</b> Coffee/Coffee Substitutes										
	<b>Brick</b> Coffee – Soluble Instant										
	<b>Brick Attribute</b>	Botanical Variety	Formation	If Decaffeinated	If Flavoured	If Organic	Origin of Coffee	Preparation Format	Roast of Coffee	Type of Creamer/Whitener	Variety of Instant Coffee or Coffee Substitute
	<b>Brick Attribute Values</b>	ROBUSTA	GRANULES	NO	NO	NO	COLUMBIA - HUILA	LOOSE - DRINK	DARK ROAST COFFEE	NONE	BLACK COFFEE

**Figure 4-5** Product Grouping (Example 1)

GPC Hierarchy	<b>Segment</b> Food/Beverage/Tobacco										
	<b>Family</b> Beverages										
	<b>Class</b> Coffee/Coffee Substitutes										
	<b>Brick</b> Coffee – Soluble Instant										
	<b>Brick Attribute</b>	Botanical Variety	Formation	If Decaffeinated	If Flavoured	If Organic	Origin of Coffee	Preparation Format	Roast of Coffee	Type of Creamer/Whitener	Variety of Instant Coffee or Coffee Substitute
	<b>Brick Attribute Values</b>	ARABICA	GRANULES	YES	YES	NO	KENY – MOUNT KENYA	LOOSE - DRINK	UNROASTED	NONE	BLACK COFFEE

**Figure 4-6** Product Grouping (Example 2)

In a different example, Beer may be considered a “Beverage” and therefore found in the Beverages Family, but it is quite different than Coffee. Therefore, all types of Beer are grouped in a Beer Brick, which will be aggregated with other Alcoholic Beverages (such as Cider and Perry), into the Alcoholic Beverages Class.

### 4.2.3 Brick Attribute and Brick Attribute Value Assumptions

Every Brick Attribute has an associated Brick Attribute Value list. Brick Attribute and Brick Attribute Values should be considered as a bonded pair. For every Brick Attribute a Brick Attribute Value is required to complete the pairing. Therefore, Brick Attribute Value lists must accommodate a wide coverage of possibilities. However, in some cases it may not be possible to complete a confirmed or

exact Attribute/Value pairing. For this reason, two special Brick Attribute Values are commonly assigned to every Brick Attribute to ensure an appropriate Attribute /Value pairing can be completed.

- **Brick Attribute Value UNCLASSIFIED** – This term indicates that it is possible to code a more specific Value for the Brick Attribute but at the time of classification an appropriate value from the values list could not be selected. If a user cannot identify a value to make the Attribute/Value pairing specific and correct to the product being classified, the user may code this value instead of coding a potentially incorrect value. The use of this Brick Attribute Value also suggests it may change in the future once the information required to select a more specific value becomes available. Initial attempts at coding Brick Attribute’s may use this Brick Attribute Value until greater certainty about specific values is obtained. It should generally be used as a last resort.

Short definition: Describes those products which cannot be assigned a specific Brick Attribute Value for a specific Brick Attribute, as the appropriate value is not present in the code list.

- **Brick Attribute Value UNIDENTIFIED** – This term is used to describe those products which cannot be assigned an attribute value for a specific attribute type, as the information required to do this is not present or obtainable or cannot be determined given the existing product information.

Short definition: Describes those products that cannot be further classified at a more granular level that is required to identify a specific Attribute Value for an Attribute Type.

**Example**

The following example identifies a Brick used to classify Instant Coffee. Generally, it is possible to identify a specific Brick Attribute Value for the Brick Attribute “Formation.” However, in this example the user selected UNIDENTIFIED until information comes to hand that enables the user to make a correct and specific selection. This suggests that at a future time the user will reclassify the item with a more specific value from the existing code list, perhaps GRANULES. The user has selected UNCLASSIFIED for the Brick Attributes “Type of Creamer/Whitener” as classification is not possible because no creamer or whitener is present.


<b>GPC</b> Hierarchy	<b>Segment</b> Food/Beverage/Tobacco										
	<b>Family</b> Beverages										
	<b>Class</b> Coffee/Coffee Substitutes										
	<b>Brick</b> Coffee – Soluble Instant										
	<b>Brick Attribute</b>	Botanical Variety	Formation	If Decaffeinated	If Flavoured	If Organic	Origin of Coffee	Preparation Format	Roast of Coffee	Type of Creamer/Whitener	Variety of Instant Coffee or Coffee Substitute
	<b>Brick Attribute Values</b>	ARABICA	UNIDENTIFIED	YES	YES	NO	KENY – MOUNT KENYA	LOOSE - DRINK	UNROASTED	UNCLASSIFIED	BLACK COFFEE

**Figure 4-7** Brick used to classify Soluble Instant Coffee

**4.3 Rules for GPC Titles**

Rule	Description
Structure/Word order:	<ul style="list-style-type: none"> <li>■ The title should be constructed with “blocks” of words in their plural form to help define a group of products e.g., Bread or Treatments</li> <li>■ The title should be constructed using nouns, verbs, and adjectives</li> <li>■ Priority words should be nouns naming the product type (1 “block” of priority words is recommended)</li> <li>■ Qualifier words should be verbs and adjectives providing further descriptive breakdown of the product type, such as: Usage, Application, Form, Method of Storage, or Powered/Non Powered. There should be a maximum of three blocks of qualifier words</li> </ul>

	<ul style="list-style-type: none"> <li>■ Abbreviations should be avoided</li> <li>■ All words should be defined in Oxford English</li> <li>■ Each priority or qualifier word should start with a capital letter</li> <li>■ Priority or qualifier words should be in alphabetical listing where relevant</li> <li>■ Each word should be descriptive as possible to aid search and browse</li> </ul>
<p>Separating blocks of words:</p>	<ul style="list-style-type: none"> <li>■ Use the hyphen “-” or ASCII character code 150 to split priority words from qualifier words e.g., block1 – block2 <ul style="list-style-type: none"> <li>□ There should be a space before and after the hyphen to differentiate between normal hyphenated words</li> <li>□ The short hyphen/dash (as used in normally hyphenated words) should not be used “-” or ASCII character code 45</li> <li>□ The long hyphen should not be used “—” or ASCII character code 151</li> </ul> </li> <li>■ If there are 3 qualifiers use another hyphen to split the first qualifier from the second qualifier e.g., block1 – block2 – block3 (block4)</li> <li>■ If there are 2 qualifiers use the curved bracket/parentheses “(“and”)” or ASCII character code 40 and 41 to split the first qualifier from the second qualifier e.g. block1 – block2 (block3) <ul style="list-style-type: none"> <li>□ There should be a space before the opening bracket</li> <li>□ There should always be an opening bracket and a closing bracket</li> <li>□ There should be no spaces between the brackets and words contained</li> <li>□ The angle brackets “&lt;”, “&gt;” or ASCII character codes 60 and 62 should not be used</li> <li>□ The square brackets “[”, “]”, or ASCII character codes 91 and 93 should not be used</li> <li>□ The braces brackets “{”, “}” or ASCII character codes 123 and 125 should not be used</li> </ul> </li> </ul> <p><b>Exceptions:</b></p> <ul style="list-style-type: none"> <li>■ Frozen, Perishable and Shelf Stable qualifier should always appear in brackets e.g., Sandwiches/Filled Rolls/Wraps (Frozen)</li> <li>■ Powered or Non Powered qualifier should always appear in brackets e.g., Air Fresheners (Non Powered)</li> <li>■ Disposable or Non Disposable qualifier should always appear in brackets e.g., Baby Diapers (Disposable)</li> <li>■ Segment qualifiers should always appear in brackets e.g., Seat Cushions (Automotive)</li> </ul>
<p>The forward oblique “/” should be used to connect/link words</p>	<ul style="list-style-type: none"> <li>■ The purpose of the oblique is to indicate an “and” and an “and/or” link</li> <li>■ There should be no spaces on either side of the oblique</li> <li>■ The backward oblique “\” should not be used</li> <li>■ The ampersand “&amp;” should not be used</li> <li>■ The comma “,” should not be used</li> </ul>
	<ul style="list-style-type: none"> <li>■ Abbreviations should not use the period (.) or ASCII character code 46 to separate or end abbreviations</li> </ul>

Abbreviations should be avoided – however when required:	<ul style="list-style-type: none"> <li>■ All letters contained in the abbreviation should be Upper case</li> </ul>
Normal Hyphen usage	<ul style="list-style-type: none"> <li>■ There should be no spaces in the abbreviation e.g., LED</li> <li>■ The short hyphen/dash “-” or ASCII character code 45 should be used</li> <li>■ There should be no space on either side of the hyphen</li> <li>■ Words before the hyphen should start with an upper-case letter</li> <li>■ Words after the hyphen should start with a lower-case letter e.g. In-car</li> </ul>
Prefixes	<ul style="list-style-type: none"> <li>■ Words prefixed with “Anti”, “Pre” or “Post” should use a hyphen. The word following the hyphen should begin with a lower-case letter e.g., Pre-recorded</li> <li>■ Words prefixed with “Non” should not use a hyphen. The words should be separated by a space and each word should begin with a capital letter e.g., Non Bound</li> </ul>
Symbols	<ul style="list-style-type: none"> <li>■ Only the symbols defined in the above rules are permitted for use. All other symbols are not permitted e.g., “!”, “?”, “£”, “\$”, “%”, “*” etc. The following ASCII character codes are not permitted: <ul style="list-style-type: none"> <li>□ 33 through 39</li> <li>□ 42 through 46</li> <li>□ 58 through 64</li> <li>□ 91 through 96</li> <li>□ 123 through 149</li> <li>□ 151 through 255</li> </ul> </li> </ul>
Other titles	<ul style="list-style-type: none"> <li>■ The Brick title should be a construct of the Brick priority word(s) with the word “Other” appended</li> <li>■ The appendix should have no separator e.g. First Aid Other</li> </ul> <p> <b>Note:</b> These Bricks may be removed at a later date</p>
Variety Pack titles	<ul style="list-style-type: none"> <li>■ The Brick title should be a construct of the Class title with the words “Variety Packs” appended</li> <li>■ The appendix should have no separator. As “Variety Packs” can occur in higher levels of the hierarchy (e.g., Class, Family, Segment) it is desirable to not have any symbols present in the titles at these levels.</li> <li>■ When the Class title already has the words “Variety Packs” appended then the Brick title will be the same as the Class title e.g. Audio Visual Equipment Variety Packs</li> </ul>
Accessories / Replacement Parts	<ul style="list-style-type: none"> <li>■ The Brick title should be a construct of the Class title with the words “Accessories/Replacement Parts” appended</li> <li>■ The appendix should use the hyphen separator e.g., Oral Hygiene – Replacement Parts</li> </ul>

**Table 4-3** Rules for GPC Titles

**Variety Pack Syntax**

1. When the Class title does not have “Variety Pack” appended  
Brick title = [Class title] “Variety Packs”
2. When the Class title does have “Variety Pack” appended

Brick title = [Class title]

3. Accessories/Replacement Parts titles – Brick title = [Class title]  
“Accessories/Replacement Parts”
4. All remaining titles refer to the Valid Formats table

**Summary of Valid Title Formats**

There are 4 valid formats (excluding the Rule exceptions):

1. Priority Words
2. Priority Words – Qualifier words
3. Priority Words – Qualifier words (Qualifier words)
4. Priority Words – Qualifier words – Qualifier words (Qualifier words)

**4.4 Rules for GPC Codes**

This section defines the rules governing GPC codes.

Level	Length	Syntax	Example
Segment codes	8	Two-digit code followed by six zeros	10000000
Family codes	8	preceded with the Segment code	10200000
Class codes	8	preceded with the Segment and Family code	10203000
Brick codes	8	preceded with a “1”	10000123
Attribute Type codes	8	preceded with a “2”	20000123
Attribute Value codes	8	preceded with a “3”	30000123

**Table 4-4** GPC codes rules

Step	Action/Description/Rule
Allocation	Codes are allocated sequentially at each level. The database selects the next available code for the level being created. Once the parent hierarchy has been determined the database then builds the complete code. For example, a new Class is created [40] and it is associated with a Family [20] and a Segment [10]. Therefore, the complete code for the new Class can be expressed as 10204000.
Level Modifications	Codes are impacted by level Modifications, Additions and Deletions. Modifications fall into two categories of severity: Major and Minor. Depending on the form of change an appropriate rule will be applied (see below).
Level Addition	e.g., a new Brick is added. The user must identify the parent hierarchy. With this information the database automatically selects the next consecutive number not previously allocated from the range at the appropriate level and either builds the complete code and/or formats the code as per the Format rules above.
Level Deletion	e.g., a Brick is deleted. The user indicates a code is to be deleted. In the database the code is flagged as “unavailable” for future publications. In this way the code will never be lost and as such it cannot be reallocated.



Impact by Change Minor Modification	e.g., a Brick description is amended to correct a spelling mistake. There will be no change to the code.
Impact by Change Major modification	e.g., a Brick is redefined warranting the Brick to be split. If a level is split, there are two options that could apply. The option selected is dependent on the severity and impact of change. A less severe example would be a Brick split into two Bricks that simply splits the products contained. In this example the rule applied would be, the existing level remains (and may be renamed) and new levels are added as required. The products requiring reclassification would be moved to their new levels whilst leaving some of the original products in the source level. A more severe example would be new Bricks being built up from existing Bricks or parts of Bricks and would require the reclassification of all the products contained in the source Bricks. In this example the rule applied would be, new levels are added as required, all products in the source level are reclassified and moved leaving the source level empty, then the source level is deleted. Added and deleted levels would follow the Addition and Deletion rules as stated above.
Reuse	Brick Codes are not reused. Once a code is allocated it becomes unavailable for reissue. Deleted codes are not deleted from the database but flagged as "deactivated."

**Table 4-5** GPC Actions

## 4.5 Rules for Managing Redundant GPC Attributes

A brick must, as far as is practical, contain products that can be characterised by the same set of attribute types relevant to the product. These attributes must meet the GPC attribute rules and be part of the global standards. Where it is deemed not practical the split will be considered based on industry input.

- During the development of a schema, a collection of attributes will be identified for each brick. These attributes will conform to the attribute rules.
- During the development of a schema, the industry providing the feedback in the context of attribute redundancy may want to consider the following:
  - Industry need – must be useable and required
  - Rules compliance
  - Size and scope – consider impact such as mapping, subscriptions, etc.

A balance needs to be struck in context of the above. Ultimately, industry need takes precedence and may accept an agreeable level of attribute redundancy.

When making this decision the industry may want to consider the type of attributes that could be used in order to prevent a change to the schema:

- Boolean attributes can provide absolute clarity without adversely impacting the brick definition. For example: 'Yes/No' or in other words 'it is' or 'it isn't.' There is no 'in between' and there is no ambiguity.
- Non-Boolean attributes may not provide absolute clarity and therefore may be more applicable in a more granular brick.

This industry should consider the impact of defining bricks at a more granular level in an attempt to eliminate attribute redundancy. The industry should remember the GPC Principle that "the number of bricks should be manageable."

**For Example:**

A singular brick titled 'Clothing' has an attribute titled 'If Maternity'. Obviously, this attribute is not applicable to Men's clothing. There are two options for resolution:

- **Option 1:** Accept the status quo recognising that for every piece of clothing the attribute 'If Maternity' must have a value of 'Yes' or 'No.'

In this option every piece of non-women's clothing would be coded with the value 'No.' There is no doubt or confusion when assigning the value as it is either 'Yes' or 'No.'

The schema remains smaller in scope and can be easily understood and applied in the industry.

- **Option 2:** Split the singular brick 'Clothing' into the various alternatives to ensure attribute clarity. Possibilities are:

- 'Clothing Women's'
- 'Clothing Men's'
- 'Clothing Unisex'
- Others?

In this option the collections of attributes would have to be re-assessed for each new brick and in this instance 'If Maternity' would only be applied to 'Clothing Women's.' The likelihood is that most of the attributes will essentially be the same across the bricks.

The schema has increased in scope and complexity as now only certain attribute are applicable to certain bricks, but absolute clarity may be achieved.

**4.6 Rules for Managing Contested GPC Hierarchies**

The parentage of a Brick can become contested when more than one parent hierarchy is possible. This may become apparent during development of a sector or through evolution of the products contained within the Brick. Anyone can alert the GPC Standards Management Group (SMG) to a contested hierarchy.

The GPC SMG investigates how the contested Brick should be weighted in terms of primary application (e.g.: place the Brick Shoeshine in the Footwear hierarchy instead of the Homecare hierarchy).

All contesting the Brick hierarchy must agree with the primary application.

<b>Segment</b>	Homecare	Automotive
<b>Family</b>	...	...
<b>Class</b>	...	...
<b>Brick</b>	Widgets	Widgets
<b>Usage</b>	20%	80%

**Table 4-6** GPC Contested Hierarchies (Example 1)

In this example it has been agreed Widgets are predominantly used and searched for in the Automotive hierarchy. Therefore, the Automotive hierarchy assumes ownership of the Brick Widgets.

If the primary application becomes not practical or consensual agreement cannot be reached, it may be possible to separate it into a Cross hierarchy e.g., Cross Segment, Cross Family, Cross Class, 'Widgets' as a Brick to be used across categories.

In this instance, the GPC SMG needs to provide their decision and sign off.

<b>Segment</b>	Homecare	Automotive	Cross Segment
<b>Family</b>	...	...	...

<b>Class</b>	...	...	...
<b>Brick</b>	Widgets removed	Widgets removed	Widgets
<b>Usage</b>			100%

**Table 4-7** GPC Contested Hierarchies (Example 2)

In this example it has been suggested Widgets are removed from both Homecare and Automotive hierarchies and placed in a Cross Segment hierarchy.

The Subject Matter Expert prepares supporting documents with assistance from the Sub Group members including the discussion around primary application and a recommendation.

The GPC SMG assesses the documentation and recommendation and provides sign off advocating one of the two possible solutions:

1. Designate a primary application and associated hierarchy or
2. Provide consent to include the disputed Brick into a new or existing Cross Segment hierarchy.

The decision of the GPC SMG is documented and distributed between the Sub Groups by the Subject Matter Expert. Impacted GPC Sub Teams implement the decision of GPC SMG accordingly.

## 4.7 Rules for GPC Prepared/Processed Classification

The rationale for determining if products are prepared or processed depends on whether they have undergone a significant change in terms of physical state prior to sale through a manufacturing process that may include cooking, drying, reforming (ground), curing, and combination with additional ingredients.

### 4.7.1 Prepared and Processed Products

#### Any product that has been:

- **Cooked** – process of preparation through heating
- **Dried** – process of removal of moisture required for bacterial growth, usually via evaporation
- **Reformed** – process whereby the product has been made into another shape e.g. a burger constructed of ground beef.
- **Smoked** – process of exposure for long periods of time to the smoke from a (usually wood) fire. Includes hot and cold smoking.
- **Salted/Curing** – process of curing through reduction of water using salt, sugar or a combination of both, or soaking in a curing solution consisting of water, salt and/or nitrate and/or sugar.
- **Added Ingredients** – products that have the additional ingredients other than a sauce or seasonings, i.e., vegetables, rice, pasta, etc. These would be classified within the 'Grain Based Products', 'Dough Based Products' & 'Vegetable Based Products'.



**Note:** Although most products that are raw will be unprocessed, raw products that are ground and reformed (i.e., ground, or minced beef) are classified as processed and prepared. Also note that products which have not been subject to any manufacturing process other than being boned, sliced, or diced are classified as Unprepared/Unprocessed

#### Examples, by family, of typical prepared/processed products are:

- **Fruit** –stewed apples, dried apricots, etc.
- **Vegetables** –roasted vegetables, dried onion, canned plum tomatoes (have been cooked), etc.

- **Meat, Poultry & Game** –roasted chicken breast, cooked beef in a red wine sauce
- **Fish** –tuna steak in brine (as it has been cooked), dried cod, fish fingers (must be reformed), sushi (as it has been smoked) etc.
- **Shellfish** –cooked shrimps, boiled lobster, crab in brine, etc.
- **Nuts & Seeds** –roasted hazelnuts, salted peanuts, dried walnuts etc.
- **Aquatic Invertebrates** –sautéed squid, fried octopus, etc.
- **Aquatic Plants** –dried seaweed, cooked carrageen moss

#### 4.7.2 Unprepared and Unprocessed Products

The rationale for determining if products are unprepared and unprocessed depends on whether they are sold in their natural state or have undergone only rudimentary change, e.g., cleaned, trimmed, chopped, peeled, or immersed in its own natural juice or water. These products can have the addition of flavouring, which does not alter its natural state, e.g., herbs, spices, seasoning, etc., though the addition of these must not be responsible for any physical change to the product. This includes products that are:

- Uncooked
- Not Dried
- Not Reformed
- Not Smoked
- Not Salted/Sugared/Cured



**Note:** The addition of seasonings, coatings, sauces, and fillings is permitted for any product that is otherwise an unprepared and unprocessed product

#### Examples of unprepared and unprocessed products with additional ingredients are:

- Raw Chicken in a red wine sauce (excluding vegetables, rice, pasta, etc.).
- Sliced raw fish seasoned with salt/pepper.
- Raw pork coated in breadcrumbs, batter, etc.
- Products immersed in brine or vinegar – brine is seen as a preservation agent not as preparation and that the product is in its natural state or just gone through rudimentary changes i.e., chopped, sliced, peeled, etc.

#### Product factors which are excluded from unprepared/unprocessed:

- Products that are cooked, dried, smoked, salted, cured, sugared, reformed, etc.
- Products that have the additional ingredients other than a sauce or seasonings, i.e., vegetables, rice, pasta, etc. These would be classified within the 'Grain Based Products, Dough Based Products, Dairy Based, Egg Based, Dairy/Egg Based Products & Vegetable Based Products' bricks.

#### Examples, by family, of typical unprepared/unprocessed products are:

- **Fruit** –chopped pineapple, fresh strawberries, blackcurrants in a fruit coulis, etc.
- **Vegetables** –raw peeled carrot batons/sticks, sliced potatoes with a sauce, mange tout in its natural state, etc.
- **Meat, Poultry & Game** –sliced raw turkey, raw beef with bone removed, raw chicken breast in a sauce, raw peppered steak, etc.
- **Fish** –raw salmon steaks, cod in batter (excludes reformed cod), etc.

- **Shellfish** –prawns in their natural state, etc.
- **Nuts & Seeds** –natural brazil nuts, etc.
- **Aquatic Invertebrates** –raw octopus in sauce, diced raw squid, etc.
- **Aquatic Plants** –raw dulse, sliced raw nori, etc.

## 4.8 Rules for GPC Horticulture Classification

The GPC Horticulture structure is based on Botanical taxonomy, the most common and widely accepted way to classify living beings: Genus and Species. The structure is based on globally-applicable taxonomical principles and aligned with other international standards such as the International Society for Horticultural Science's Commission on Nomenclature and Cultivar Registration. Cultivars are currently NOT included because they are already defined and governed by the International Society for Horticultural Science (ISHS) and too detailed and numerous for classification purposes.

Since GPC is intended to classify widely traded flowers and plants, as a guideline, new Bricks should only be granted for new genus-species combinations if they contribute more 0,5 % to the world turnover within their GPC respective Family. For smaller Genus-Species combinations, a catch-all brick is included within every Family. This restriction is necessary as there are currently thousands of Genus-Species combinations, however it still allows GPC to support more than 98% of globally traded flowers and plants. All new Horticulture classification requests will be checked against these guidelines; however, proper consideration will be given to a requester's turnover/market share needs.

In addition, GPC technical issues require the Live Plants family to be divided into two sections:

- Genus A thru G
- Genus H thru Z

## 4.9 Rules for GPC Storage / Preservation Classification

The rationale for determining if products are shelf stable, perishable, or frozen depends on product claim stated on the package by the manufacturer and not how it's sold. Product preservation and storage is focuses on the way products are treated after their development in order to maintain their integrity over time.

- **Shelf stable** – Products that can be stored safely for long periods of time at room temperature without spoiling or decaying.
  - Products that can be stored ambient but must be keep refrigerated once opened should be classified as shelf stable.
  - Products without storage information in the package should be classified as Shelf Stable.
- **Perishable** - Products that must be stored in the refrigerator until they are opened or prepared for consumption.
  - Perishable foods should be stored in the refrigerator and to be consider perishable the information related with the storage must be stated in the package.
  - "Keep refrigerated" or the temperature claim means it should be kept in the refrigerator (fridge) and the products should be classified as Perishable.
- **Frozen** - Products that must be stored frozen until they are opened or prepared for consumption.
  - Frozen products should be stored in the freezer and to be considered frozen the information related with the storage must be stated in the package.
  - "keep frozen" or the temperature claim means it should be kept in the freezer and the products should be classified as Frozen.



**Note:** Temperature range for perishable and frozen products should follow the local regulations

## 5 GPC Publication

GPC has adopted a publication methodology which targets both GDSN Data Pools and the General Trading Partner Community. To facilitate these two audiences, GPC is published in different formats.

### 5.1 GPC Standards

A series of documents, XLS, and XML and JSON files bundled an individual .zip file are available in the GS1 Website <http://www.gs1.org/access-gpc-standards>

#### 5.1.1 GPC Schema

This document provides the complete GPC Schema at the point of publication


GPC Schema		
<b>File Name</b>	'Publication name' (YYYY-MM-DD) EN - example GPC as of May 2022 (2022-05-25) EN	
<b>File Format</b>	XML / EXCEL / JSON	
<b>File Location</b>	<a href="http://www.gs1.org/access-gpc-standards">http://www.gs1.org/access-gpc-standards</a>	
<b>File Fields</b>	SegmentCode	Segment Code with 8 digits length (with two digits followed by six zeros)
	SegmentTitle	Segment description / title
	SegmentDefinition	Segment definition
	FamilyCode	Family Code with 8 digits length (preceded with the Segment Code)
	FamilyTitle	Family description / title
	FamilyDefinition	Family definition
	ClassCode	Class Code with 8 digits length (preceded with the Family Code)
	ClassTitle	Class description / title
	ClassDefinition	Class definition
	BrickCode	Brick Code with 8 digits length (preceded with a 1)
	BrickTitle	Brick description / title
	BrickDefinition_Includes	Brick definition with includes statement
	BrickDefinition_Excludes	Brick definition with excludes statement
	AttributeCode	Attribute Code with 8 digits length (preceded with a 2)
	AttributeTitle	Attribute description / title
	AttributeDefinition	Attribute definition
	AttributeValueCode	Attribute Value Code with 8 digits length (preceded with a 3)
AttributeValueTitle	Attribute Value description / title	
AttributeValueDefinition	Attribute Value definition	

**Table 5-1** GPC Schema file details

#### 5.1.2 GPC Delta

This document contains all the changes between the current and previous publications. This file includes two different tabs:

1. Classification tab – Includes all the changes in terms of classification.
  - Added, updated, removed, or moved codes in the GPC schema
2. Relations tab – Includes the changes in terms of attribute and attribute values relationship with the bricks.
  - Added and removed attributes and attributes values codes from the brick relationship

 **Note:** If an attribute and/or attribute value is added and/or removed from the overall schema, this change will be available in the classifications tab, however, if the attribute and/or attribute value its only added or removed from certain bricks, this change will be available in the relation tabs (in this case the attribute and/or attribute value is not new or it was not removed from the overall schema).

<b>GPC Delta</b>																						
<b>Name</b>	Delta - 'Publication name' (YYYYMMDD v YYYYMMDD) EN - example Delta - GPC as of May 2022 (20220525 v 20211209) EN																					
<b>Format</b>	EXCEL / JSON																					
<b>Location</b>	<a href="http://www.gs1.org/access-gpc-standards">http://www.gs1.org/access-gpc-standards</a>																					
<b>Classifications tab</b>																						
Context	Identifies the path to the hierarchy levels up. <ul style="list-style-type: none"> <li>As Segment is the first level in the hierarchy, the context for this level will be "blank"</li> <li>For Attributes and Attributes values the context will be available in the relations tab</li> </ul>																					
Level	Identifies the level changed (Segment, Family, Class, Brick, Attribute or Attribute Value)																					
Parent Code	Identifies the parent code for the specific level. <ul style="list-style-type: none"> <li>As Segment is the first level in the hierarchy, the parent code for this level will be "blank"</li> </ul>																					
Code	Identifies the code changed (Segment, Family, Class, Brick, Attribute or Attribute Value)																					
Title	Identifies the Title of the code changed (Segment, Family, Class, Brick, Attribute or Attribute Value)																					
Definition	Identifies the includes statement of the code changed (Segment, Family, Class, Brick, Attribute or Attribute Value)																					
Definition Excludes	Identifies the excludes statement of the code changed (Segment, Family, Class, Brick, Attribute or Attribute Value)																					
Date	Identifies the date of the action/change																					
WR Number	Identifies the Work Request Number to the specific change																					
State	Identifies the change type: <p><b>Added</b> - The level has been added to the database (i.e., a new code has been added)</p> <p><b>Updated</b> - The level has updated / modified (i.e., name and/or definition has been changed)</p> <p><b>Moved</b> - The level has been moved (i.e., the level has changed its place in the hierarchy)</p> <p><b>Removed</b> - The level has been removed (i.e., this code has been deleted from the hierarchy)</p> <ul style="list-style-type: none"> <li>If a code has more than one change type, the code will be available in two or more rows (one for each change)</li> <li>In the example below the brick code 10002225 was moved and changed</li> </ul>																					
	<table border="1"> <thead> <tr> <th>Level</th> <th>Parent Code</th> <th>Code</th> <th>Title</th> <th>WR Number</th> <th>State</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>Brick</td> <td>75020100</td> <td>10002225</td> <td>Pillows</td> <td>22-000095</td> <td>Moved</td> <td>Bricks moved from Class Bedding(75020200) to Class Household/Bedding/Office Fabric/Textile Furnishings(75020100) WR 22-000095/000108/000109/000110</td> </tr> <tr> <td>Brick</td> <td>75020100</td> <td>10002225</td> <td>Pillows</td> <td>22-000095</td> <td>Updated</td> <td>Definition Includes/Excludes updated</td> </tr> </tbody> </table>	Level	Parent Code	Code	Title	WR Number	State	Comment	Brick	75020100	10002225	Pillows	22-000095	Moved	Bricks moved from Class Bedding(75020200) to Class Household/Bedding/Office Fabric/Textile Furnishings(75020100) WR 22-000095/000108/000109/000110	Brick	75020100	10002225	Pillows	22-000095	Updated	Definition Includes/Excludes updated
Level	Parent Code	Code	Title	WR Number	State	Comment																
Brick	75020100	10002225	Pillows	22-000095	Moved	Bricks moved from Class Bedding(75020200) to Class Household/Bedding/Office Fabric/Textile Furnishings(75020100) WR 22-000095/000108/000109/000110																
Brick	75020100	10002225	Pillows	22-000095	Updated	Definition Includes/Excludes updated																
Comment	Identifies any additional Comments added to the change																					
<b>Relations tab</b>																						
Context	Identifies the path to the hierarchy levels up where the Attribute and Attribute Value is present																					
Brick Code	Identifies the Brick code where the specific Attribute and Attribute value was added or removed																					
Brick Title	Identifies the Brick title where the specific Attribute and Attribute value was added or removed																					
Attribute Code	Identifies the Attribute code where the specific Attribute value was added or removed																					
Attribute Title	Identifies the Attribute title where the specific Attribute value was added or removed																					
Attribute Value Code	Identifies the Attribute Value code that was added or removed																					

Attribute Value Title	Identifies the Attribute Value title that was added or removed
Date	Identifies the date of the action/change
WR Number	Identifies the Work Request Number to the specific change
State	Identifies the change type: <b>Added</b> - The attribute and/or Attribute value has been added to a specific brick in the database <b>Removed</b> - The attribute and/or Attribute value has been removed to a specific brick in the database
Comment	Identifies any additional Comments added to the change

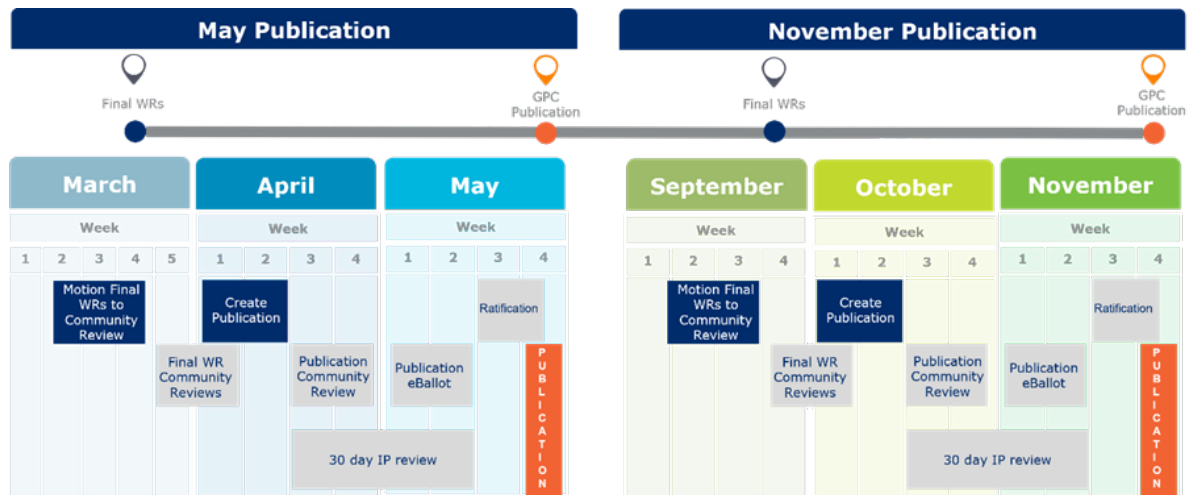
**Table 5-2** GPC Delta file details

## 5.2 GPC Browser

A GPC Specific Web-based database that allows for web browsing of the GPC Publication Schedule <https://gpc-browser.gs1.org/>

## 5.3 GPC Publication Schedule

GPC uses a “Consolidated Release” strategy to publish the GPC Schema twice per year, one in May and the other in November.



**Figure 5-1** GPC Publication Schedule

The official (normative) GPC information is published in Oxford English. Both the schema and the browser information are translated to other languages as well. In any case, the English publication is the reference material. The latest GPC publication to be incorporated into GDSN network is also available from the Website.

## 5.4 Translations

Oxford English is the reference language for all GS1 standards including GPC. To support GPC adoption around the world, GS1 GO hosts and supports MO representatives who provide GPC translations through the “GPC Translations Tool”. Translated versions of GPC can be accessed by the public on the GPC Website via the GPC Browser <https://gpc-browser.gs1.org/> along with the official Oxford English version.



**Note:** Allowing access to the tool for translation and publication is an exceptional and strong advantage of GPC versus other classification systems.



## How are GPC translations published and managed?

To address the need for centrally managed translations and to encourage the deployment of GPC, a tool was developed to enable GS1 MO access to GPC online. This "GPC Translations Tool" facilitates translations in local languages and the delivery of translated GPC information efficiently.

Once an MO agrees to be a translator, GS1 GO will setup a user account and provide instructions on how to provide the translation. Once the translation is complete, it is published to the online browser on the GS1 website. MOs are free to generate additional XLS / XML / Reporting files and distribute or charge for them as they see fit. It is the sole responsibility of the MO to ensure that the translated information is accurate.

## 6 GPC Implementation and Integration in other Standards and Services

### 6.1 GPC interactions and usage

GPC standard is a mandatory classification used across services and solutions, such as Activate, Verified by GS1, GS1 Analytics and in the GPC Browser.

The GPC standard is also used in the Global Data Synchronisation Network (GDSN) and Global Data Model (GDM).

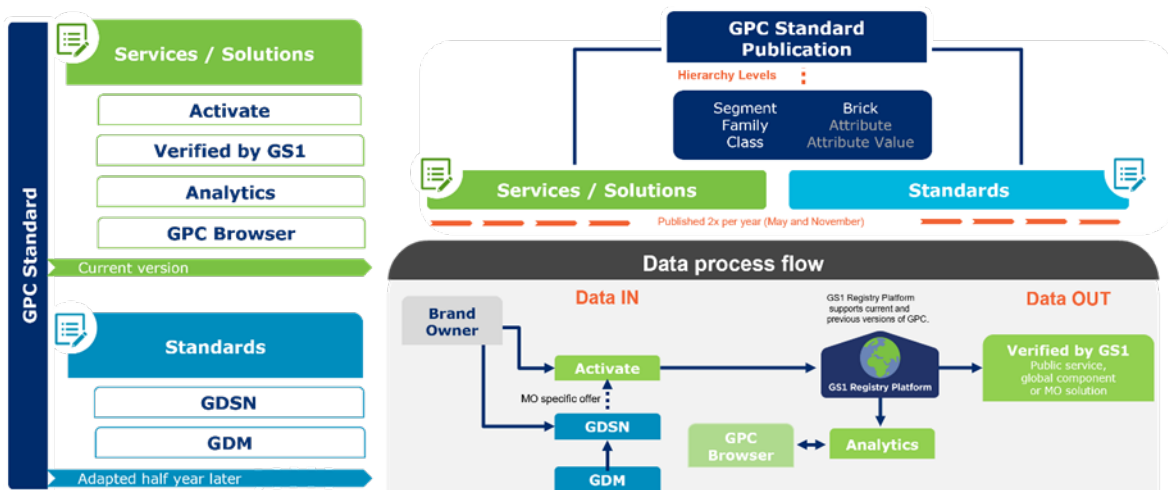


Figure 6-1 GPC Interactions and Usage

### 6.2 What is the Role of GPC in GDSN?

GPC gives buyers and sellers a common language to group products the same way globally to ensure effective data synchronisation in the Global Data Synchronisation Network (GDSN).

GPC enables the following processes:

- Item Registration
- Subscription
- Validation
- Search
- Publication/Subscription Match


## 6.3 GPC Implementation and Integration in GDSN

### 6.3.1 Implementation into the GDSN

This process also addresses the steps whereby a Trading Partner, or a Solution Partner on behalf of a trading partner, cannot find an appropriate GPC code.

A GPC Brick Code MUST be supplied as it is mandatory in the network for a product to be registered.

- The network will validate codes against the production list of valid GPC brick codes in the GDSN.
- Valid codes include any published GPC code or “8 nines” (99999999) which is a temporary code for Bricks that either have not been developed or for new products that do not fit with the current schema.
- If the correct code cannot be found, they must use “8 nines” until an appropriate code is made available. See [Section 4.1.4](#).
- The network will not/cannot validate if the code used is valid in context (i.e., this Brick code is valid for this product).
- The type of code assigned depends on the relationship between the trading partners (TP) and solutions providers (SP).
- The TP will make every attempt to find the correct code.
- The next step would be to submit a WR to the Global Standards Management Process (GSMP), monitor the progress, and once an appropriate code is made available, the TP can update their system.
- The GPC schema can only evolve when WRs are received. Every WR is processed individually or bundled so categories can evolve separately at any time. This is the driving force behind GPC’s publication release strategy which prohibits version numbers. Each publication is date stamped.

 **Note:** Updates to codes, once a product has been registered, are dependent on the TP/SP implementing changes promptly after they are defined and published in the GPC Standard Delta reports (a report of what was added, changed and removed). GDSN has a process for implementing GPC updates within the network. This means that GPC Brick Codes will not be implemented into GDSN as soon as they are released, but as per the publication cycle, usually within 5 to 6 months of publication.

### 6.3.2 Integration into the GDSN

Upon completion of a GPC publication (twice per year) the GPC Subject Matter Expert sends the GDSN the following file:

- **XLS Schema** - Complete snapshot of all active nodes in all published standards in the GPC Schema at the point of publication. The purpose of this document is to provide a complete and correct view of what is contained in the GPC Schema at the point of publication.
- **XLS Delta** – An XLS document that contains the changes between the current and previous publications. The purpose of this document is to enable automatic changes/updates to GPC data contained in the GDSN.

GDSN will integrate/process the XLS Delta document. The XLS Delta identifies changes to the GPC Schema by identifying the type of change using change codes and the level of change:

- **Additions:** The introduction of a new code. For every addition the GDSN will add the new codes to their database.
- **Modifications:** When the code has NOT changed but the textual description or definition HAS changed. GPC Codes are not re-used. If the Brick impacted has a significant definition change the normal process is to add new codes and delete old codes. For every modification, the GDSN will update the descriptions of the codes impacted in their database.

- **Marked for Deletion:** Codes that are marked for deletion are removed from the GPC schema publication; however, the codes should not be used to code any items in GDSN until a decision is made to implement the version in GDSN. This is step one of the two-step process to delete GPC Codes. One of the activities that is completed by the GS1 Global Registry as part of this process is to produce a data pool by data pool report of all items and subscriptions that currently use the GPC codes that have been identified as 'marked for deletion'. The GPC codes that are marked for deletion become the list of codes that become 'physical deletions' in the next integration in GDSN.
- **GPC update in GDSN:** For every GPC release, there can be deletions. Those deletions become critical to manage in the systems when the GPC release is implemented in GS1 Global Registry (GR). GPC brick codes that are deleted will be also deleted in GS1 Global Registry when it is implemented. As a result, deleted GPC Codes will not be able to pass anymore in GS1 GR if they still are using codes marked as deleted.

### 6.3.3 Brick Code Details

- Added = New Data in the Database
- Removed = Data removed from the Database
- Moved = Data moved in the Database
- Updated = Data updated in the Database
- The following two possible values only apply to the brick in the delta:
  - Added/Moved = Brick has been added to a segment and moved from the initial segment (i.e., the brick has changed its place in the hierarchy but, has not been subject to any other change)
  - Added/Moved/Updated = Brick has been moved and updated (i.e., the brick has changed its place in the hierarchy and its name and/or definition has been changed)

### 6.3.4 GPC – GDSN Deployment Timeline

The following timeline shows the typical progression of GPC publications from publication through implementation into the GDSN.



Figure 6-2 GPC-GDSN Deployment Timeline

## 7 GPC Related Documentation

Document	Description, Audience, and Location
GPC Publication (Schema)	<p><b>Description:</b> Global Product Classification (GPC) is a mandatory standard for GDSN that enables global search and reference, category analysis and global data synchronisation.</p> <p><b>Target Audience:</b> GS1 MOs, Data Pools, Implementers, Software Developers</p>

	<b>Format:</b> Excel, XML and JSON <b>Location:</b> <a href="http://www.gs1.org/gpc">http://www.gs1.org/gpc</a>
GPC Browser	<b>Description:</b> The GPC browser allows you to browse all components (Segment, Family, Class, Brick, Brick Attributes and Brick Attribute Values) of the current GPC schemas. <b>Target Audience:</b> GS1 MOs, Data Pools, Implementers, Software Developers <b>Format:</b> HTML Browser <b>Location:</b> <a href="https://gpc-browser.gs1.org">https://gpc-browser.gs1.org</a>
GPC Basics	<b>Description:</b> GPC Basics provides users with an overview of GPC <b>Target Audience:</b> GS1 MOs, Data Pools, Implementers <b>Format:</b> Web page and PDF <b>Location:</b> <a href="https://www.gs1.org/standards/gpc/how-gpc-works">https://www.gs1.org/standards/gpc/how-gpc-works</a>
GPC Browser Guide	<b>Description:</b> Shows users the steps how to access the GPC schema online, identify the GPC Brick and extract all relevant information: <b>Target Audience:</b> Biz Exec; GS1 MOs, Data Pools, Implementers <b>Format:</b> Web page <b>Location:</b> <a href="https://www.gs1.org/sites/gs1/files/docs/gpc/GPC-Browser-Guide.pdf">https://www.gs1.org/sites/gs1/files/docs/gpc/GPC-Browser-Guide.pdf</a>
GPC FAQ	<b>Description:</b> GPC Questions and answers <b>Target Audience:</b> Business /Executive Users / GS1 MOs <b>Format:</b> HTML <b>Location:</b> <a href="https://xchange.gs1.org/sites/fag/Pages/topic.aspx?t=GPC">https://xchange.gs1.org/sites/fag/Pages/topic.aspx?t=GPC</a>
GPC Community Room	<b>Description:</b> work in progress GPC related documents <b>Target Audience:</b> Implementers, Software Developers <b>Format:</b> various <b>Location:</b> <a href="http://xchange.gs1.org/cr/gsmg/smg/gsmgpcsmg/Pages/Home-wg.aspx">http://xchange.gs1.org/cr/gsmg/smg/gsmgpcsmg/Pages/Home-wg.aspx</a>

Table 7-1 GPC Documentation

## 8 Appendix: GPC Rule Example

Rule	Definition	Example
<b>Broad Area of Differentiation</b>	Products differ at a broad level	Within Home Appliances Major Domestic – Appliances are split out at a high level from Small Domestic Appliances which is a broad area of differentiation.
<b>Broad Area of Application</b>	Products have a differing area of application	Within Home Appliances, Major Domestic Appliances, such as those used for cooking are split out at a lower level into Hob, Oven, Cooker, etc. as their applications differ from each other. As even though they are grouped together according to common purpose an additional split needs to be made for area of application.
<b>Common Purpose and Use</b>	Deciphers the more specific function of the products included in an individual group. The common purpose & usage assists in stipulating a more precise use of the product.	Within Home Appliances, Major Domestic Appliances, such as those used for cooking are split out from those used for cooling as their common purpose is totally different.
<b>Processed to Similar Methods</b>	Products have been processed to similar methods	Processed or prepared is determined as; has gone through further manufacturing processes e.g., reformed, cooked, dried, salted, etc., however these products can also be coated, in sauce, stuffed or filled. Unprocessed or unprepared is determined as; has not been cooked, dried, reformed, smoked or slated/cured, however can be coated, in sauce, stuffed or filled.
<b>Used and Applied Similarly</b>	Products are used and/or applied similarly	In FMCG, products are often grouped according to how they are used or applied. Cosmetics are split out according to whether or not they are used on the body, face, nails, etc.

<b>Similar Form &amp; Material</b>	Products are of a similar form or material	The form of a product would sometimes depend on the preservation method e.g., fresh milk is liquid, shelf stable milks can be dehydrated, etc. However, products made from different materials will require a different attribute set which will therefore determine a split.
<b>Powered vs. Non- Powered</b>	Products use an external power source or are operated manually	Powered saws such as chainsaws are split from hand saws as a different attribute set would be required.
<b>Replacement Parts</b>	Products which are solely used as replacement parts to other products currently existing within the class	Powered toothbrush heads which cannot be used alone and are used as replacement parts to powered toothbrushes.
<b>Storage / Preservation</b>	Products are stored and preserved in similar manner	The split of a collection of dairy products results from this rule. Bricks must be set up by storage preservation type; Perishable (must be refrigerated), Frozen (are frozen) and Shelf Stable (have been treated or packaged so as to extend consumable life).
<b>Variety Packs</b>	Products which are sold together and comprise products contained in separate bricks, classes, families, and segments.	Products such as Wine and Cheese combination which are often packaged together at Christmas or gin sold with tonic, which may or may not be packaged together. Product with come free with other purchases are not included in this principle.
<b>Other</b>	Products which cannot currently be catered for within the existing GPC schema.	Products are placed here if there is no holding place form them within the existing GPC schema. Whilst a proposal for change is submitted this brick within the likely class can be used as a temporary holding group.
<b>Application / Function</b>	In case products may have special application / function, which need additional consideration.	General Tools within Hardlines splits tools at a high level based on whether or not they are powered or manual tools. Before the rule is specifically covering this area was introduced. This would have bene seen as a special application / function rule. This is something which particularly drives a split of this type of product.