MEAT AND POULTRY

Implementation Guide for GDSN Data Alignment of Meat and Poultry Trade Items

R5.0 — JUN 24 2014

GS1 US

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CONTENTS

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1 INTRODUCTION

This guide describes which of the defined GS1 Global Data Synchronization Network™ (GDSN®) attributes should be used for meat and poultry products and recommends best practices for the use of these standards to synchronize meat and poultry product information among suppliers, retailers, distributors, and foodservice operators. This guide is platform neutral and can be used with or without third party service providers.

1.1 DOCUMENT PURPOSE

This document was prepared to support to companies seeking to electronically synchronize meat and poultry product information in accordance with GS1 Standards. This guidance applies to the full range of meat and poultry trade items, including fixed weight and variable weight (i.e., catch-weight or tray-pack) products.

1.2 SCOPE

This guide covers GS1 GDSN attributes for Trade Items only. This version is constructed to be consistent with GS1 Business Message Standard (BMS), Version 2.7.2, released June 22, 2010. This guide is not intended to be a substitute or replacement for the current GS1 Business Message Standard nor is it intended to be an exhaustive list of all GDSN attributes. Users should consult GS1 Standards for more detailed information about attribute use whenever questions arise. Should there be a divergence between this guide and the GS1 Standards, the GS1 Standards take precedence.

1.3 CONTRIBUTORS

GS1 US acknowledges the significant contributions of the organization known as the Meat and Poultry B2B Data Standards Organization (or mpXML) and industry stakeholders listed herein in the development of this document. This guide represents the work of many individuals representing a range of companies including meat and poultry suppliers, retailers, brokers, third-party service providers, government, and standards organizations. In particular, the work of Steve Rosenberg of GS1 US was indispensable in the development of this guide. His knowledge of the GS1 Standards, patient review, and valuable suggestions added immeasurable value to this resource. Those contributing their time to create, test, revise, and validate this guide include:

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1.4 LOG OF CHANGES IN R5.0

RELEASE NO.	DATE OF CHANGE	SUMMARY OF CHANGE
R5.0	06/12/2014	Brand update as a result of mpXML transition to GS1 US; added disclaimer information; and updated copyright and trademarks

Table A. Log of Changes

2 EXPLANATION OF ATTRIBUTE DESIGNATIONS

Attributes include both mandatory and optional attributes that have been determined to be valuable for effective synchronization. Core attributes are those considered mandatory. Attributes in optional classes and subclasses, however, may be designated as "Recommended," "Dependent," "Optional," or "Not Recommended" depending on the applicability of that attribute for carrying essential information about meat and poultry items. An overview of the attribute designations is shown in the following table.

GDSN DESIGNATION	RECOMMENDATION	GUIDE COLOR CODE	EXPLANATION
MANDATORY ATTRIBUTE	Mandatory	GREY	Use is required for all document instances
OPTIONAL ATTRIBUTE	Recommended	GREEN	Use is encouraged by for effective meat and poultry item synchronization
	Dependent	GREEN	Use is encouraged when the attribute is applicable to the hierarchy level being defined
	Optional	YELLOW	Use is valuable in certain situations as determined by trade parties
	Not Recommended	WHITE	Use is not appropriate or not applicable

Table B.   Attribute Designations

3 PRODUCT-SPECIFIC GDSN ATTRIBUTE USAGE

GDSN product attributes useful in describing important information about meat and poultry products is provided in a spreadsheet entitled *GDSN Trade Item Attributes for Meat and Poultry*. Orange-colored columns provide implementation guidance specific to meat and poultry products that extends the product-neutral guidance in the blue-colored columns. That spreadsheet, which contains this information along with additional attribute information and examples for two-level product hierarchies, can be downloaded from www.gs1us.org/fresh-foods/tools-and-resources.

4 PRODUCT-SPECIFIC IMPLEMENTATION GUIDANCE

4.1 DISTINGUISHING VARIABLE MEASURE PRODUCTS

The classes and attributes for trade item synchronization were originally developed for consumer goods that typically have a fixed weight. Meat and poultry trade items, as well as other perishables, often have a variable item weight, for example, a whole chicken where each product may weigh 2.5 pounds to 5 pounds. In response to the needs of variable weight products, a Boolean attribute "isTradeItemAVariableUnit" has been added. This attribute would be marked "Yes" for an item that has a variable weight, and "No" for an item that has a fixed weight even though its piece count may be variable.

To summarize:

IDENTIFYING VARIABLE WEIGHT AND FIXED WEIGHT PRODUCTS
1. **If a trade item varies by weight, set the "isTradeItemAVariableUnit" attribute to "YES".** 2. **If a trade item does not vary by weight, set the "isTradeItemAVariableUnit attribute to "NO".**

Please note: The "is TradeItemAVariableUnit" attribute may be different in various levels of a trade item hierarchy depending on the physical weight variance at the level. You may have a fixed weight case, but the each is variable weight where the count of eaches varies to meet a fixed weight case, as an example.

4.2 START WITH MANDATORY ATTRIBUTES

Experience with trade item synchronization has shown that supplier systems need to carefully validate the data values they send for attributes and that trading partners need to carefully validate the business rules in place for processing new item requests for variable measure trade items. In both cases, trading partners new to variable measure synchronization are best served by starting with messages that contain only core attributes for meat and poultry. Other attributes can be added later in response to trading partner requests for non-mandatory attributes. Trade item attributes in designated as Mandatory are the core attributes and initial efforts between trading partners to synchronize variable measure products should include only these attributes. (See Section 3 of this guide for a link to the *GDSN Trade Item Attributes for Meat and Poultry* spreadsheet.)

To summarize:

ATTRIBUTE CONTENT FOR SYNCHRONIZATION MESSAGES
1. **Trading partners should begin synchronizing meat and poultry products using messages that contain only Mandatory attributes.** 2. **Once successful with the core messages, trading partners can add recommended and other non-mandatory attributes requested by trading partners.**

4.3 GTIN ALLOCATION GUIDANCE FOR VARIABLE MEASURE PRODUCTS

Data synchronization provides accurate product information for both orderable units (such as cases) as well as consumable units (such the consumer retail items). To accomplish this goal, item information is built as a hierarchy, with the EACH consumer retail item and the CASE orderable item each having a unique Global Trade Item Number® (GTIN®).

Variable measure retail level trade items, for instance a tray pack of chicken breasts, use a UPC-A Type 2 (aka Number System 2) barcode containing the price and a non-global product code instead of a standard UPC with a twelve-digit product GTIN. Because the GTIN cannot be captured at the point of sale for variable weight products, suppliers often do not assign a GTIN to the EACH item.

However, with the Sunrise date of 2014 for adoption of the GS1 DataBar® for the perishables industry, meat and poultry suppliers will be in a position to transition from the UPC-A Type 2 barcode to a GTIN within the GS1 DataBar barcode format. This will enable the adoption and usage of a globally unique product identifier for variable measure retail level trade items.

GS1 GTIN allocation rules require that the indicator value (the first digit) of a 14-digit GTIN for any CONSUMABLE variable measure product be a "0", and for an ORDERABLE product, that the indicator value be a "9". Additionally, GS1 recommends that brand owners assign GTINs at both the CASE and EACH level for both fixed- and variable- weight items. Therefore, it is recommended that the same item reference number be used for variable weight items at both the EACH and CASE level whenever the EACH is CONSUMABLE and the CASE is ORDERABLE. This is accomplished by changing the leading case indicator value from a "9" to a "0", and recalculating the check digit. When two or more hierarchy levels are CONSUMABLE, then use a different item reference number with the GTIN indicator value set as below:

PRODUCT TYPE	EACH		INNERPACK		CASE		PALLET	
	Consumable[1]	Consumable[3]	Orderable[4]	Consumable	Orderable	Orderable	Consumable[1]	Consumable[3]
FIXED WEIGHT GTIN[2]	0	0	1 to 8	0	1 to 8	1 to 8	FIXED WEIGHT GTIN[2]	0
VARIABLE WEIGHT GTIN[2]	0	0	0	0	9	9	VARIABLE WEIGHT GTIN[2]	0

Table C.   Assignment of Indicator Digit for Meat and Poultry GTINs

1 Note that Consumable means the item is sold to consumers at point of sale. Foodservice products are typically NOT consumable.

2 Note that if any two hierarchy levels of the same product have the same indicator digit, they cannot also have the same item reference number; use a different item reference number.

3 Note that if an item is both orderable and consumable, the indicator is a 0.

4 Note that the item cannot also be orderable.

To illustrate the use of the indicator digit, consider the example of a fixed weight and variable weight breaded tenderloin product where there are 10 consumable inner-packs of 2 5-lb consumable items in each case, and 40 cases to a pallet. The indicator digit for each product GTIN would be applied as follows:

Variable weight EACH and INNERPACK units may not have the GTIN marked on the package but only be a "phantom" GTIN.

To summarize:

GTIN ALLOCATION FOR VARIABLE WEIGHT PRODUCTS

1. **Ensure that the existing CASE-level GTIN starts with a "9".**

2. **For the EACH-level GTIN, change the leading digit of CASE-level GTIN from "9" to "0" and recalculate the check digit.**

3. **Variable measure products can only have a leading digit of "0" or "9". Therefore, if a PALLET-level GTIN is required, use a different GTIN item reference number with a leading digit of "9".**

4. **If a MULTI-PACK-level item is present and is scannable at the point of sale (is consumable), use a different GTIN item reference number with a leading digit of "0".**

4.4 GTIN ALLOCATION GUIDANCE FOR CHILLED OR FROZEN PRODUCTS

A unique synchronization issue for the meat and poultry supply chain is the situation where a product could be sold either in a chilled state, a frozen state, or both. Trade item data contains attributes that note the storage handling maximum and minimum temperatures that can be used to indicate whether a product is marketed only in a chilled or frozen state. Additionally, the GS1 Global Product Classification (GPC) Refrigeration State brick descriptor allows product to be designated as frozen or chilled. However, when sales of a product occur over a limited season, sometimes producers freeze product out of season to have enough product to distribute during the selling season. Other times, chilled product is frozen due to excess production. In these cases, the same product could be sold in a chilled or frozen state.

It is recommended that GTIN allocation consider the primary refrigeration state of the product. When a product is regularly marketed in both chilled and frozen states, then two GTINs should be allocated for the product, one for each refrigeration state. However, if a product is only primarily marketed in one refrigeration state or the other, then only one GTIN for the product is necessary. For seasonal products which could be sold as chilled

or frozen, such as spiral-cut hams and whole turkeys, the possibility of product being delivered in either refrigeration state even though there is only one GTIN for the product needs to be noted when the retailer authorizes the product.

The key to efficient movement through the supply chain is good communication between trading partners. If a supplier only has frozen product available for a customer that normally buys only chilled, the supplier needs to communicate with the customer to insure that this is acceptable. This communication is critical in cases where over-production has caused product with a "chilled" GTIN to be frozen before releasing it into the supply chain.

To summarize:

GTIN ALLOCATION FOR PRODUCTS THAT COULD BE CHILLED OR FROZEN
1. **Assign the GTIN based on the primary state in which the product is marketed (ex. Chilled or Frozen).**
2. **If product is normally marketed in both a Chilled and Frozen state, assign two GTINs to the product, one for each state.**
3. **Suppliers should communicate carefully with retailers regarding the refrigeration state of seasonal or feature products that are classified as a Chilled product but have been previously Frozen to meet product demand.**

4.5 GTIN ALLOCATION GUIDANCE FOR PRODUCTS FROM DIFFERENT COUNTRIES OF ORIGIN

Certain meat and poultry products sold in the US are subject to USDA Country of Origin Labeling (COOL) laws. The requirements of this law mandate specific country of origin labeling categories that designate the country(ies) an animal was born, raised and slaughtered. Note that the tradeItemCountryOfOrigin attribute indicates all possible countries of production, and does not address other factors used to determine which USDA country of origin category. Therefore, suppliers should use the tradeItemCountryOfOrigin attribute to designate all possible countries of production for a product, but should communicate the USDA COOL category to the customer using labeling statements on products and invoices and with values in EDI messages as described in the *mpXML Implementation Guide for USDA Country Of Origin Labeling Requirements for Meat and Poultry Products* available at http://www.gs1us.org/fresh-foods/tools-and-resources

To assist retailers in the sourcing of product by country of origin, when products can be consistently sourced from one country of origin or another, assign different GTINs to product from each source.

To summarize:

GTIN ALLOCATION FOR PRODUCTS FROM DIFFERENT COUNTRIES OF ORIGIN

1. **Label all meat and poultry product cases and packages with the appropriate COOL statement and invoice designations.**

2. **When product can be readily separated by country of origin, assign a separate GTIN to each product.**

3. **Use the additionalTradeItemDescription attribute to indicate all possible countries of production, but understand that the country of production is not always the country of origin (e.g., Product imported from Canada and immediately processed in the USA has a COOL statement of "Product of Canada and USA" but the country of production is the USA).**

4. **Consult the *COOL Implementation Guide* for assistance on product labeling, recordkeeping, and integrating COOL information into EDI messages.**

4.6 GTIN ALLOCATION AT THE PALLET LEVEL

As noted, the goal of the synchronization process is to transmit data based on a product hierarchy, from EACH to CASE to PALLET. However, if a GTIN is assigned at the PALLET level, then by definition the dimensions of the cases on the PALLET are fixed. In the meat and poultry supply chain, sometimes different plants use different pallet configurations. For this reason, it is recommended to assign a GTIN at the PALLET level ONLY if the PALLET is an orderable unit and the configuration of the PALLETS is consistent across all production facilities. If a GTIN is assigned at the PALLET level, the dimensions of the PALLET load do NOT include the PALLET itself; this allows different types of physical PALLETS or even slip sheets to be utilized.

To summarize:

GTIN ALLOCATION AT THE PALLET LEVEL

1. **Assign a GTIN to the PALLET level whenever the PALLET is an orderable, shippable, and invoice unit for the product and the PALLET configuration is does not change.**

2. **Do not assign a GTIN to the PALLET level if the PALLET configuration can vary by producing plant or from order to order.**

If supply chain partners do not assign a GTIN at the PALLET level, but still wish to limit ordering to PALLET quantities, this information can be transmitted at the CASE level, using the orderQuantityMinimum and orderQuantityMultiple attributes. It is recommended to use the quantityOfLayersPerPallet (Hi) attribute to transmit the MAXIMUM number of CASES that can be stacked on a pallet.

To summarize:

TRANSMITTING PALLET-UNIT ORDER QUANTITIES AT THE CASE LEVEL

1. **Set orderQuantityMinimum to the number of CASES on a PALLET.**

2. **Set orderQuantityMultiple to the number of CASES on a PALLET.**

3. **Use quantityOfTradeItemsPerPalletLayer to specify Ti at the case level.**

4. **Use quantityOfLayersPerPallet to specify Hi at the case level.**

Note that Ti (also called Layer) and Hi (also called Tier) can be set at the CASE level using the quantityOfTradeItemsPerPalletLayer and quantityOfLayersPerPallet attributes. The total number of cases per pallet can also be set at the CASE level using the quantityOfTradeItemsPerPallet attribute. Although Pallet-level product examples are not provided in this guide, further guidance is available from your GDSN-certified Data Pool.

4.7 GTIN ALLOCATION AT THE CASE LEVEL

All fixed weight and variable weight CASE-level products should have a GTIN assigned. Note that for all products, including private label, the Brand owner determines the GTIN value at the CASE level, NOT the supplier. This principle is well established for fixed weight product and becomes critical for variable weight product with the emerging use of the GS1 DataBar that encodes a complete GTIN for the EACH-level item.

To summarize:

GTIN ALLOCATION AT THE CASE LEVEL

1. **Assign a GTIN to all CASE-level products.**

2. **The Brand owner and NOT the supplier determines the GTIN value.**

4.8 GTIN ALLOCATION AT THE EACH LEVEL

For fixed weight product, EACH-level products should have a GTIN assigned. Note that GTINs at the EACH-level item are set by the Brand owner, just as they are at the CASE-level. This ensures that the same GS1 Company Prefix is used in GTINs at the CASE-level and EACH-level of the product hierarchy, which is necessary to associate both product levels to the same product hierarchy.

For variable measure product, the assignment of a GTIN at the EACH level is optional unless the packages will be marked with a GS1 DataBar, in which case it is mandatory. Note that without the GS1 DataBar, the variable measure EACH-level products cannot be marked with a barcode that encodes the complete GTIN.

To summarize:

GTIN ALLOCATION AT THE EACH LEVEL

1. **Assign a GTIN to all fixed weight EACH-level products.**

2. **The Brand owner and NOT the supplier determines the GTIN.**

3. **GTINs MUST be assigned to variable weight EACH-level products WHEN packages will be marked with a GS1 DataBar barcode.**

4. **GTINs MAY be assigned to variable weight EACH-level products when packages are NOT marked with a GS1 DataBar barcode.**

4.9 IDENTIFYING CASE-READY AND STORE-PROCESSED VARIABLE MEASURE PRODUCTS

The meat and poultry supply chain includes variable measure case-ready products that are packaged and ready for the display case with the possible addition of price barcodes, and products that are bulk–packed that require additional store handling before they are ready for consumer purchase. Because of the differences in labor, retailers need a way to readily distinguish products of each type. It is recommended to use the variableTradeItemType attribute to distinguish these two product types. For case-ready product, set the variableTradeItemType to "Pre-packed" and for bulk-pack products set this attribute to "Loose."

To summarize:

IDENTIFYING PRE-PACKAGED AND BULK-PACK VARIABLE MEASURE PRODUCTS

1. **For products that are packaged for consumer sale (both pre-priced and not pre-priced), set the variableTradeItemType attribute to "Pre-Packaged".**

2. **For products that typically require additional handling before they are ready for consumer purchase, set the variableTradeItemType attribute to "Loose".**

4.10 USING GLOBAL PRODUCT CLASSIFICATION CODES

One benefit of data synchronization is the potential for improving product classification. Effective product classification can facilitate synchronization messaging (getting the item data to the right buyer), product sourcing (identifying products by their general attributes), and "demographic category management" for tracking broad consumption patterns across the supply chain (comparing industry-wide product sales by geographic area).

Global product classification systems such as the GS1 Global Product Classification (GPC) are hierarchical coding systems that define the common attributes of products in a given classification group. The GPC code is one of the required attributes in the GS1 Global Registry™ and must be present to publish a product. Additionally, the product codes from other classification systems can also be included in synchronized trade item data through the use of the additionalClassificationCategoryCode and the additionalClassificationCategoryDescription attributes.

As an overview, most product classification approaches contain two levels: the brick or commodity level, which is a general categorization of the product group; and the descriptor level, which is one or more characteristics that define more specific features of products in that product group. For example, a boneless beef top-round steak product would have a GPC Brick code of "Unprocessed/Unprepared Beef" with a brick descriptor "Boneless" value of "Yes". Another example would be a fully-cooked bone-in ham that would have a GPC brick code of "Prepared/Processed Pork" with a brick descriptor "Level of Cooking" value of "Fully Cooked".

The GPC is a robust product classification system that has special relevance for data synchronization because it is a required element for all published products. In 2008, GS1 revised the meat and poultry GPC coding system to create species-specific bricks that reflect the basic level of processing for a product. These revised brick and descriptor codes were integrated into the GDSN in 2009.

It is recommended that the GPC brick code and applicable GPC brick descriptors be published for all products. Meat and poultry products are naturally complex, and publishing the GPC brick descriptors is necessary to communicate the complete nature of each product.

The United Nations Standard Products and Services Code® (UNSPSC®) is another widely used global product classification system. In 2007 the UNSPSC revised its meat and poultry classification codes to specify the species, whether the product is minimally processed or processed, and whether non-meat additions like water or seasonings have been added. However, the use of the UNSPSC does not add additional descriptive value beyond the GPC bricks and descriptors, and its publication as an additional classification code is therefore optional.

To summarize:

USING PRODUCT CLASSIFICATION CODES

1. **Assign the appropriate 8 digit GS1 GPC Brick Code. A list of bricks can be found at http://www.gs1.org/1/productssolutions/gdsn/gpc/browser/index.html**

2. **Assign values to all GPC brick descriptors assigned to that brick.**

3. **Optionally, assign the UNSPSC code as an additional classification code.**

4.11 DETERMINING PRODUCT DIMENSIONS FOR CONSUMABLE VARIABLE WEIGHT TRADE ITEMS

Data providers should use a consistent approach when measuring the width, height, and depth of EACH-level variable measure meat and poultry products. Similarly, users of this data need to understand how the dimensions were determined if they are to make proper and consistent use of the information. GS1 issued the *GDSN Package Measurement Rules* guidance that details the standard approaches to measuring regularly

and irregularly shaped trade items at the case and consumer level. For a copy of the *GDSN Package Measurement Rules*, visit the GDSN Standards link at www.gs1.org.

Guidance was established to extend package measurement rules to variable measure meat and poultry products. This guidance also contains examples for measuring fixed weight meat and poultry products. In summary, it states:

MEASURING PRODUCT DIMENSIONS OF VARIABLE MEASURE EACH ITEMS

1. **The default front is largest surface area used by the producer to sell the product (same as for general consumer products).**

2. **Looking at the default front, measure the vertical HEIGHT and the horizontal WIDTH of the product, and then finally measure its DEPTH.**

3. **FOR ALL DIMENSIONS, MEASURE THE LARGEST PRODUCT FROM A REPRESENTATIVE SAMPLE.**

4. **Do not include any product seams in the dimensions UNLESS the product package is designed to be hung or is a stand-up pouch.**

The examples below illustrate how the product dimensions are determined for two variable measure products:
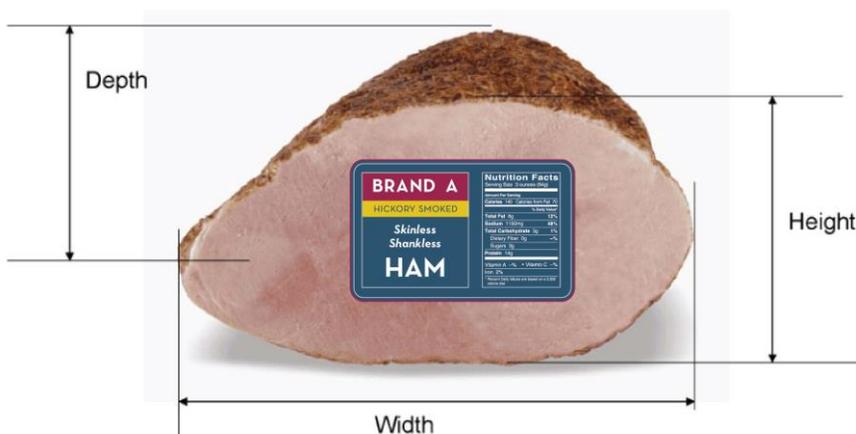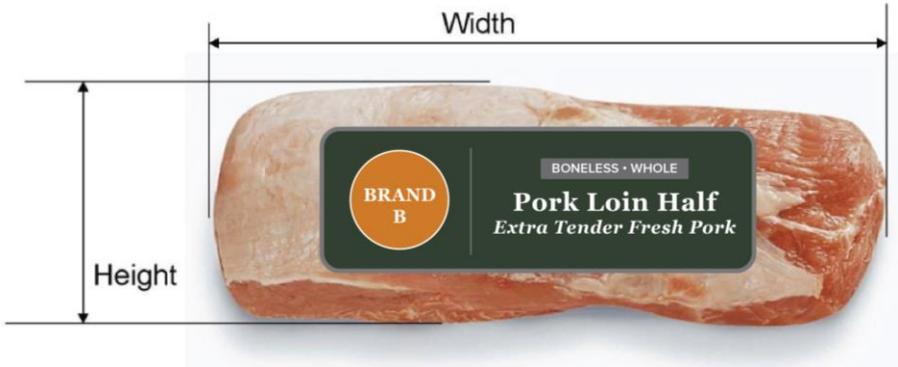
5 ADDITIONAL RESOURCES

GS1 Global Traceability Standard

http://www.gs1.org/docs/gsmp/traceability/GS1_Global_Traceability_Standard_i1.pdf

Model for the Adoption of Critical Tracking Events in the Meat and Poultry Supply Chain

http://www.gs1us.org/industries/fresh-foods/meat-and-poultry

Implementation Guide for GDSN Data Alignment of Meat and Poultry Trade Items

http://www.gs1us.org/industries/fresh-foods/meat-and-poultry

Produce Traceability Guidance Documents

http://www.producetraceability.org

Building the Fresh Foods Supply Chain of the Future

http://www.fmi.org/forms/uploadFiles/28DBC00000008.toc.RoadmapFinal_exec.pdf

GS1 DataBar

http://www.gs1.org/barcodes/databar

6 APPENDIX: LIST OF TABLES AND FIGURES

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IAPMO

In this publication, the letters "U.P.C." are used solely as an abbreviation for the "Universal Product Code" which is a product identification system. They do not refer to the UPC, which is a federally registered certification mark of the International Association of Plumbing and Mechanical Officials (IAPMO) to certify compliance with a Uniform Plumbing Code as authorized by IAPMO.

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