

Obtaining UPC Barcodes for Sales of Value-Added Agricultural Products

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INTRODUCTION

Value-added agriculture entrepreneurs and direct farm marketers interested in wholesaling products for resale through distributors, brokers or to retail stores are often required to have unique Universal Product Codes (UPCs), referred to as UPC barcodes, to identify products. Many online retailers, such as Amazon and Walmart, also require UPCs on products sold through their platforms. Some point-of-sale and inventory systems generate barcodes for use internally by users, however, many wholesalers or online retailers specifically require UPC barcodes representing unique product identification numbers for individual products. These identifiers are needed to distinguish between individual products around the world.

While some businesses only require UPCs for packaged products, others may require UPCs for every product sold to them including bulk fresh produce or perishable items. Producers considering marketing through these channels should look for vendor requirement documents that are often publicly available online or contact representatives from the specific business they are working with to determine their needs and requirements.

The task of obtaining UPCs and including them on products, packaging or labels may seem challenging, and producers may not know where to start. This publication provides guidance to producers interested in obtaining UPCs by answering some frequently asked questions including:

- What is a UPC?
- How can a producer acquire UPCs?
- What are the risks of purchasing from sources other than GS1?
- How many UPCs are needed?
- How much do UPC licenses cost?
- How does a producer purchase UPC licenses from GS1?

WHAT IS A UPC?

A UPC, which stands for Universal Product Code, is a scannable strip of black lines coded to represent a unique number that helps identify a specific product. A complete barcode is made of two components: 1) the strip of black lines called the data carrier and 2) the unique number printed below the strip of black lines known as the data. Barcodes are typically printed on the product packaging or labeling.

Producers interested in wholesaling products typically need UPC-A barcodes representing a 12-digit Global Trade Item Number (GTIN). GS1 US offers UPC licenses to entrepreneurs or businesses allowing them to use specific GTINs for their products. These licenses from GS1 US guarantee the UPC codes to be unique from any other product code in the world.

As shown in Figure 1, the GTIN and associated data carrier make up a complete barcode and are often included on product labels. Each unique product and product variation (flavors, sizes of packaging, etc.) requires a separate GTIN. Point-of-sale or inventory system scanners read the data carrier in order to complete sales transactions and/or track inventory.



Figure 1. Barcode Components

Note that GTIN barcodes cannot be used for medical devices, drug products, individual units of variable measure products or mixed cases, or to create discount coupons.

SPECIAL CONSIDERATIONS FOR VARIABLE MEASURE TRADE ITEMS

Variable measure trade items include products such as wheels of cheese or bulk lunchmeats sold in large units to a retailer that are later cut or sliced at the retail location to be sold to end consumers in smaller units. These smaller units are called individual units of variable measure and likely vary by weight and/or dimension.

Producers of variable measure trade items, such as a wheel of cheese, would obtain a GTIN for the wheels of cheese but not for any of the individual units sold from the wheels of cheese since those units vary greatly. Variable measure trade items are not scanned at retail checkout, and therefore, are not purchasable by consumers. Once portioned into smaller units, the retailer would use an internal system (barcode or other type of system) to identify and complete transactions of the portioned individual units of variable measure.

GTINs for variable measure trade units are 14 digits rather than the 12 for non-variable measure products discussed previously. Each variable measure trade item has an indicator digit of nine assigned as the first number in the GTIN-14 and a final digit called a check digit.

When creating GTINs for variable measure trade items, producers will need to indicate application identifiers and a packaging level for each product. Application identifiers are units of measure such as net weight, net volume or count. (Net weight must be identified in pounds with two decimal places.) Packaging levels include a case as each, mixed case, pallet or mixed pallet.

For more information on variable measure trade items from GS1, please refer to GS1 US Data Hub® Product

- Working with Variable Measure Trade Items User Guide at [gslus.org/content/dam/gslus/documents/tools-resources/resources/data-hub-help-center/gslus-data-hub-working-with-variable-measure.pdf](https://www.gs1us.org/content/dam/gslus/documents/tools-resources/resources/data-hub-help-center/gslus-data-hub-working-with-variable-measure.pdf).



Figure 2. Some companies are turning boring UPCs into works of art.

HOW CAN A PRODUCER ACQUIRE UPCS?

Authentic UPCs originate from a single entity called GS1. In the United States, UPC barcodes and associated GTINs are managed by GS1 US (website available at [gslus.org](https://www.gs1us.org)). GS1 does not sell the barcodes themselves; rather, GS1 sells licenses that allow businesses to create and print a certain number of barcodes in the GS1 online data hub tool.

WHAT ARE THE RISKS OF PURCHASING FROM SOURCES OTHER THAN GS1?

Producers may find many other potential sources of UPCs on the Internet, including those from UPC resellers offering codes at a cheaper rate or in more flexible numbers. However, purchasing UPCs from sources other than GS1 is risky. There is no guarantee that these other barcode sources are not selling the use of the UPC to more than one business; therefore, the barcode would not be unique to a single product. In addition, the UPCs would not be connected with the producer at GS1 because the producer would not hold a GTIN license or company prefix. This would prevent the ability to trace the product back to the producer using the barcode, which may be necessary for several reasons, including the instance of a product recall.

Some potential buyers of wholesale products requiring UPCs may also require proof from GS1 that the producer owns the GTIN license(s) and/or company prefix. Producers who have licensed GTINs or company prefixes from GS1 US are able to download identifier certificates from the GS1 US Data Hub®. These can be provided to potential buyers as proof a producer owns their GTIN or company prefix. In addition, anyone can search for the owner of a GTIN on the GS1 site to verify product information.



Figure 3. Estimating the Number of Barcodes Needed

HOW MANY UPC LICENSES ARE NEEDED?

A producer should carefully estimate how many barcodes are needed for their product lineup (considering both their current products and any potential future expansion of products) as licenses for UPCs can be purchased individually or in groups of up to 10, 100, 1,000, etc. Accurately predicting the maximum number of UPCs needed can save producers both time and money as they consider future endeavors.

A different barcode is needed for each unique product. This means that a different barcode is needed for each flavor, size, and packaging variation of a product. The number of barcodes a producer needs can add up quickly. For example, if a producer is selling ice cream to a grocery store in five different flavors – chocolate, vanilla, strawberry, mint and coffee – and in two different sizes of container for each flavor – 16 ounces and 32 ounces – that producer would need a total of 10 barcodes for current products alone. If just one more flavor was added in both sizes, the total number of UPC barcodes needed would increase to 12 (10 + 2). Then if another size for each flavor offered was added, the total number of unique barcodes needed would increase to 18 (12 + 6) as shown in Figure 3.

A barcode estimator tool is available on GS1's website to help small businesses determine how many UPC licenses they would need to purchase for their items. Find the GS1 US Barcode Estimator Tool at www.gs1us.org/tools/barcode-estimator/home.

HOW MUCH DO UPC LICENSES COST?

GS1 US offers a variety of purchase options based on the number of barcodes needed. As of November 2024, producers may purchase single GTINs for \$30 with no annual renewal fee. Geared especially for small businesses, this includes a lifetime subscription to the GS1 US Data Hub® for one user that allows subscribers to create their own barcodes and manage product data online.

GS1 suggests that producers who need more than nine GTINs should consider opting for a GS1 company prefix rather than purchasing single GTINs. The GS1 company prefix specifically identifies the business who purchases the license as the owner of each barcode and the associated product. The company prefix assigned to a business will become part of the GTIN for every product created the producer's licenses.

Company prefixes can be created to produce barcodes for as few as 10 and up to 100,000 unique products or product variations. These company prefixes are available in several tiers or "capacities" of barcodes such as 1-10 and 1-100 as shown in Table 1. Producers are encouraged to select the range that will best meet both their current and future needs. Prices range from an initial fee of \$250 and an annual renewal fee of \$50 for up to 10 barcodes up to an initial fee of \$10,400 and annual renewal fee of \$2,100 for up to 100,000 barcodes.

Thinking back to the ice cream example from earlier, that producer would need more than 10 GTIN/barcodes for their product variations and estimated future needs. Therefore, the best "capacity" for their farm business would likely be the 1-100 GTIN license range. If the producer only purchases the 1-10 capacity to begin, they would pay the \$250 initial fee. When they grow to need the eleventh barcode, they would have to pay the initial fee for the 1-100 capacity, which is \$750.

Table 1. Initial Fees and Annual Renewal Fees for Various Numbers of Items Needing a GTIN/Barcode

Number of Items Needing a GTIN/Barcode	Initial Fee	Annual Renewal Fee
1	\$30	None
1 – 10	\$250	\$50
1 – 100	\$750	\$150
1 – 1,000	\$2,500	\$500
1 – 10,000	\$6,500	\$1,300
1 – 100,000	\$10,500	\$2,100



HOW DOES A PRODUCER PURCHASE UPC LICENSES FROM GS1?

Producers interested in purchasing UPC licenses should begin by visiting gs1us.org and clicking on “Get a Barcode.” From there, producers may follow prompts to purchase a single UPC barcode license or several UPC barcode licenses.

If purchasing a license for a single barcode, producers will be asked to enter their brand name and product description before adding a \$30 GS1 US GTIN license to their cart. Space will then be available to enter a company name, phone number and address. The producer also may indicate whether a company is tax-exempt or not at this time. During check out, the producer will provide a company name, phone number and address. Finally, contact information for the person submitting the order is needed, including their first and last name, email address, phone number, functional area, job title and address.



If purchasing licenses for a capacity of barcodes, such as 1-10 or 1-100 as outlined in Table 1, a producer will choose to “Get a Prefix” and follow instructions on the site to indicate the number of items needing a barcode by choosing the desired capacity. An entrepreneur may choose to license more than one company prefix if it is necessary to distinguish products by brands or company name. The producer will follow prompts to pay the initial fee, including the cost of the GS1 membership that allows access to the GS1 US Data Hub® where GTINs and barcodes can be generated. During check out, the producer will provide the same information as asked for the purchaser of a single GTIN license (company name, phone number, address, tax exemption status, order contact information - first and last name, phone number, functional area, job title and address).



After a producer activates a GS1 membership, they can access the GS1 US Data Hub® to generate their GTINs and barcodes and manage data by visiting gs1us.org/tools/gs1-us-data-hub/product. Producers will be responsible for paying an annual renewal fee to keep the license(s) and membership to the data hub current.

For questions with GS1 US Barcodes or support, producers may contact a GS1 member support agent at 931-435-3870 or email info@gs1us.org.



Operator/Restaurant

IDENTIFY

- Operator GLNs are assigned and managed

CAPTURE

- Cases are tracked to validate delivery to correct location with GLN, completing transfer of ownership by distributor
- Delivery is validated by restaurant operator against order and invoice
- GTINs including Date & Batch/Lot/Serial Numbers (if applicable) are used to drive inventory management and replenishment

SHARE

- Delivery invoice with GTINs including Date & Batch/Lot/Serial Numbers (if applicable) for each case are sent by the distributor
- Internal systems are fed and product data is synchronized by GDSN as product changes occur
- GDSN data is used to identify food allergens and nutritional information for menu creation and menu labeling

BENEFITS

Enables faster response to recalls, outbreaks of food-borne illness, and new food safety regulations

Provides for better product, allergen, and nutritional information

Increases operational efficiencies across various business processes

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ADDITIONAL RESOURCES

GS1 offers a set of industry standards, known as GS1 standards, that all members of a value-chain utilize in order to ensure products are consistently and accurately identified. This not only helps suppliers and distributors run more efficiently but also allows manufacturers to minimize costs.

GS1 Standards in Action: Foodservice

gs1us.org/content/dam/gslus/documents/industries-insights/by-industry/food/standards-in-action/GS1-US-Foodservice-Booklet.pdf

GS1 Standards in Action: Fresh Foods

gs1us.org/content/dam/gslus/documents/industries-insights/by-industry/food/standards-in-action/Standards-in-Use-for-Fresh-Foods.pdf

SUMMARY

Value-added agriculture entrepreneurs and direct farm marketers interested in wholesaling products often must meet several requirements to sell products through distributors, to brokers or to retail stores.

One such requirement is that each unique product sold must have its own unique barcode (including a UPC and GTIN) on the package or label. To guarantee that the barcode uniquely identifies the brand, company and product, producers should purchase GTIN licenses directly from GS1 US. Producers may purchase a license for a single GTIN or a company prefix for as few as 10 GTINs on the GS1 US website (gs1us.org).

It is important for producers to accurately estimate the number of barcodes needed for each distinctive product (e.g., product type, flavor, size, package style, etc.) now and in the future to determine which capacity of GTINs to license. Under- or overestimating the number of GTINs needed can increase the costs involved from initial licensing fees.

Producers may generate GTINs, create barcodes, manage data and pay annual renewal fees within the online GS1 US Data Hub® tool.

REFERENCES

GS1 US. Accessed online May 30, 2024 at www.gs1us.org.



GS1 STANDARDS IN FOODSERVICE

Across the supply chain trading partners are connecting with each other and leveraging the power of information by using GS1 Standards as the foundation of their business processes.



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