Case UPCs

The UPC Shipping Container Symbol is used to mark cartons, cases, or pallets that contain products which have a UPC or EAN product identification number. The container symbols are used by manufacturers and distributors to take inventory or tally shipments quickly and accurately. The short-hand name for the symbol is "ITF-14," which is an acronym for "Interleaved 2 of 5" (the type of barcode used) and 14 digits (the length of the container symbol). The ITF-14 symbol contains the following information:

- Digit 1: Packaging indicator
- Digits 2-3: UPC numbering system or EAN prefix
- Digits 4-8: Manufacturer identification number
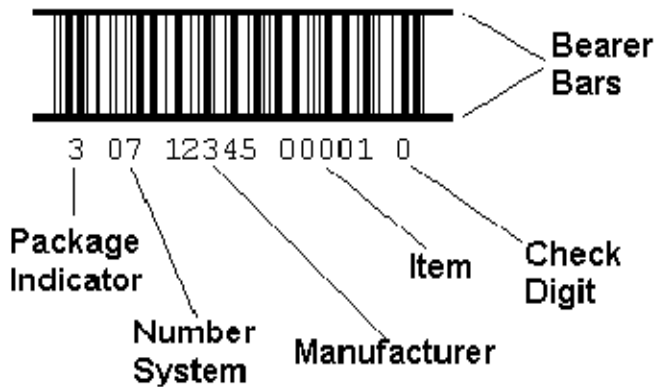- Digits 9-13: Item identification number
- Digit 14: Check digit

The first digit describes the type of package. There are no official restrictions on values 1 through 7 other than the contents must have the same UPC indicated by the container symbol. The following codes are used by convention:

- 0. UPC code of contents differs from case code
- 1. More than each and below inner packs
- 2. Alternative for 1
- 3. Inner packs
- 4. Alternative for 3
- 5. Shipping containers (cartons)
- 6. Alternative for 5
- 7. Pallet
- 8. Reserved by Uniform Code Council for future use
- 9. Variable quantity content

Exactly how many units are inside any of these containers is established by each manufacturer and co-ordinated with their distributors and wholesalers. For example, the Acme Candy Company's popular Sticky Snakes Caramel Candy (4 ounce box) has a UPC code of 7-12345-00001-9 and is marked with a standard UPC-A barcode:

These items are packed in point of sale display cartons which Acme marks with an ITF-14 code. Acme informs all distributors and wholesalers that a level 3 package for this particular product contains 24 individual retail units:

3 07 12345 00001 0

Package Indicator

Number System

Manufacturer

Item

Check Digit

Bearer Bars

The lines at the top and the bottom of the barcode are called "bearer bars" and are used to prevent something called a "short scan." Because of the structure of the Interleaved 2 of 5 code, it is statistically possible in some situations for a scanner to cut diagonally through only part of the code and still think that it has read valid data. The bearer bars disrupt the scan and insure that only complete scans will return a valid read. The bearer bars have another advantage when using the flexographic process to print barcodes directly on cartons: they provide extra physical support for the ends of the bars on the flexographic plate. Using a complete box also provides support for the ends of the bearer bars:

3 07 12345 00001 0

When the above ITF-14 code is scanned, the grocer's software can automatically determine that a display box containing 24 retail boxes of Sticky Snakes Caramel Candy has been received. However, because of the popularity of Sticky Snakes Caramel Candy, the distributors and grocers need to work with larger quantities. Acme packages 12 of the display boxes into a shipping carton, a total of 288 retail boxes. Acme marks these shipping cartons as Level 5 and lets everyone know that they contain 288 retail boxes (packed in display boxes of 24 each):

5 07 12345 00001 0

This works well for normal distribution channels where everything moves in standard quantities. But Acme has some large customers who order in non-standard quantities. These customers have insisted that the shipping cartons be marked with the actual quantity of retail boxes inside each carton. A pack level code of 9 indicates that the carton contains a variable number of units. A second barcode indicates the actual number of units in the carton; this barcode includes a 5-digit quantity and a check digit. The two barcodes are separated by a space; in some cases a thick vertical bar is used to separate the two codes. The barcode below is used to mark cartons containing 196 each 4 ounce retail boxes of Sticky Snakes Caramel Candy:

9 07 12345 00001 2   C0196 0

In their quest for increased sales, Acme's marketing department came up with the idea of selling Sticky Snakes Caramel Candy in 6-packs ("Den O' Snakes"). Test marketing was successful, and Acme made the 6-pack a standard retail product with its own UPC code. The next item number they had available was 00022, and they now use it to mark each Den O' Snakes 6-pack:

7 12345 00022 4

For this product, Acme selected a larger shipping carton and let distributors know that the Pack Level 5 ITF-14 code shown below marks cartons containing 50 each Den O' Snakes 6-packs:

5 07 12345 00022 9

Note that Pack Level 5 cartons may contain different amounts depending on the particular product. Item 00001 cases contain 288 each 4 ounce boxes of Sticky Snakes Caramel Candy packaged in display boxes of 24 units. Item 00022 cases contain 50 each Den O' Snakes 6-packs (a total of 300 each 4 ounce boxes).

If your carton graphic layout is being created electronically using publishing software, software can be used to create the master barcode artwork. The artwork can be pasted electronically or printed out on a laser printer or typesetter. When dealing with lower volumes, a complex mix of different products, or variable case quantities, it is often more efficient to print ITF-14 barcodes on demand using laser, inkjet, or thermal transfer printers.