



The Global Language of Business

Barcode

User Guide

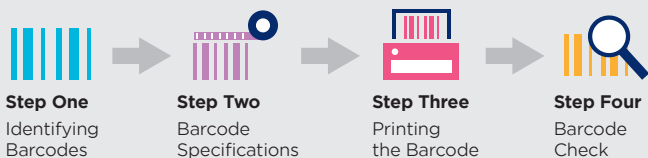


Barcode Basics

- This user guide is an overview of how GS1 barcodes work and how to apply them in your business. The GS1 system, which includes barcode numbers, is administered in Australia by GS1 Australia.
- GS1 Australia is the only organisation authorised by GS1 Global to allocate and administer barcode numbers in Australia. Australian businesses should exercise caution if they wish to engage with any other organisation claiming otherwise.
- In the retail supply chain, scanning a GS1 barcode at each point allows you to uniquely identify and track products. The barcode encodes a Global Trade Item Number (GTIN).
- Your customers want suppliers to have GTINs on their products so they can scan the corresponding barcodes to electronically keep track of sales, orders and pricing information.
- Product attributes, such as price and description, are not encoded in the barcode. Once decoded, the barcode number is cross-referenced in a product database. This 'look-up' presents the price at Point-of-Sale and records the sale in the retailer's system.
- Each product that has the same characteristics (size, shape, colour, weight, etc) will have the same GTIN (barcode number). If a product has at least one different characteristic it must have a different GTIN, so it can be distinguished from other similar products.

Further information about the GS1 system can be found at www.gs1au.org/resources/technical-documents. Barcode numbers in this publication are examples for demonstration purposes only and are not true to size.

A guide to making a barcode



Step One

Identifying Barcodes

Retail Trade Items

(Also referred to as Point-of-Sale and Consumer Items)

List your retail item/s and create a retail barcode number Global Trade Item Number (GTIN). Retail items commonly use a GTIN-13.

ITEM	PACKAGING	GTIN-13
Coloured Hair Conditioner	Bottle of 250ml	9312345670000



Barcode your retail item/s with an EAN-13 which is the pattern of vertical bars and spaces encoding the GTIN-13 which is the number.

Check Digit Calculator

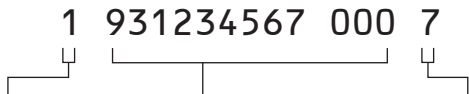
Before printing your barcode, make sure the Check Digit has been correctly calculated. The Check Digit, the last number of the barcode, is calculated by following a mathematical formula and acts as a 'security check' for the scanner. Without the correct Check Digit, the scanner will not decode the barcode.

To assist you with the Check Digit Calculator please call our Customer Support Team on **1300 227 263** or visit www.gs1au.org/resources/check-digit-calculator

Non-Retail Trade Items (Inners and Cartons)

List your inners and/or cartons and create a GTIN (barcode number). Non-retail items commonly use a GTIN-14 or a GTIN-13.

ITEM	PACKAGING	GTIN-14
Coloured Hair Conditioner	Box of 24 Bottles of 250ml	19312345670007



Indicator Choose a digit between 1 and 8	GS1 Company Prefix and Item Reference	Check Digit Checks the validity of the entire number
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Label these non-retail trade items with either ITF-14 or GS1-128 barcodes. As shown below, these barcodes encode the GTIN-14.



19312345670007

Example of ITF-14, which encodes a GTIN-14



(01)19312345670007(17)981010(10)123456

Application Identifier (AI)

GTIN

AI

Expiration Date

AI

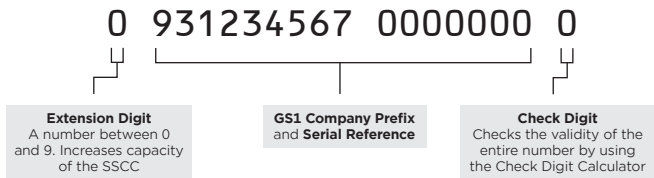
Batch/Lot Number

Example of GS1-128, which encodes a GTIN-14 plus other attributes

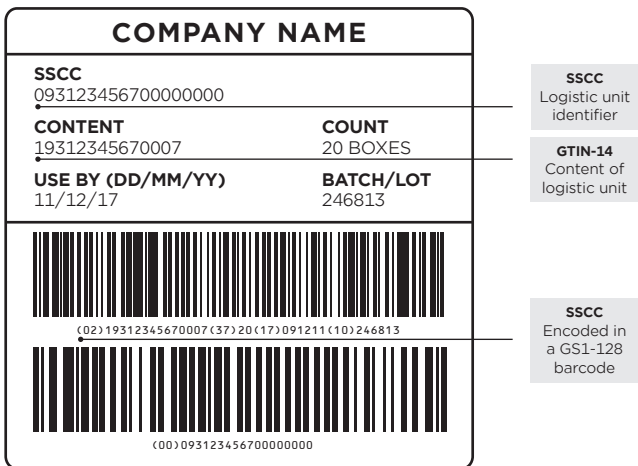
GS1-128 barcodes allow for additional information such as use-by dates and batch numbers to be encoded.

Pallets (Logistic Units)

If you or your trading partners need to trade uniquely identified products at pallet level, then create a unique Serial Shipping Container Code (SSCC) for each pallet.



Pallets (and any other logistic unit) should have a GS1-128 barcode displayed on a GS1 Logistics Label.



Example of GS1 Logistics Label

NOTE: Not to scale

Step Two

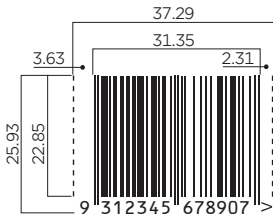
Barcode Specifications

Physical requirements such as size, height, colour and location are critical. Barcodes that do not comply cause delays in the supply chain as they do not scan reliably.

Size

There are specific ranges for all barcodes. If the barcode is not the right size, the scanner simply cannot read the bars and decode the number. Make sure your barcode fits the size requirements for magnification before printing it on your product. Refer to the GS1 Barcode Size Gauge for spacing requirements.

EAN-13 barcode (All measurements are in millimetres) (QZ - Quiet Zone)					
MAGNIFICATION	X-DIMENSION	WIDTH	HEIGHT	LEFT QZ	RIGHT QZ
80%	0.26	25.08	18.28	2.90	1.85
100%	0.33	31.35	22.85	3.63	2.31



Example of a nominal size (100%) EAN-13 barcode (Diagram is not to scale)

ITF-14 barcode (All measurements are in millimetres)				
MAGNIFICATION	X-DIMENSION	WIDTH	HEIGHT	QUIET ZONES
62.5%	0.64	76.52	32.00	6.35
100%	1.02	122.43	32.00	10.16

For full magnification rangest refer to www.gs1au.org/resources/technical-documents



Example of a 100% ITF-14 barcode (Diagram is not to scale)

GS1-128 barcode (All measurements are in millimetres)

MAGNIFICATION	X-DIMENSION	WIDTH	HEIGHT	QUIET ZONES
50%	0.51	68.07	32.00	5.08
100%	1.02	136.14	32.00	10.16



Example of a 100% GS1-128 barcode (Diagram is not to scale)

Height

Cutting the barcode height to fit the package design is not recommended as your product may not scan.



Colour

It is vital that the colour of the barcode and its background are recognisable by a scanner. A dark barcode on a light background is essential for scannability. Refer to the barcode colour chart for examples of both scannable and non-scannable barcodes.



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SCANNABLE Barcodes



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NON-SCANNABLE Barcodes

Location

The location of the barcode on your product must be considered in your overall product design. GS1 Australia has a set of recommendations, however, the product must be considered in its final form before the barcode can be applied. Seams, seals, additional labels, corners, overlapping materials etc., can infringe on a barcode and make it illegible to the scanner. Pallets (and any other logistic units) also have location requirements. For more information refer to the GS1 Australia Technical Documents at www.gs1au.org/technical-documents



Quiet Zones

To read a barcode correctly, a scanner must be able to detect where the barcode starts and where it finishes. Areas to the left and right of the barcode must be kept clear of obstructions that may cause scanning difficulties.



Step Three

Printing the Barcode

Once your barcode has the correct size, height, colour and position, it's just as important to ensure the barcode is not smudged or blurred. It must have crisp, clear, well defined bars, as the scanner will not read imperfections in the barcode.

We have a Solution Provider Directory with details of companies that will help you print your barcodes. Visit www.gs1au.org/solution-providers



Step Four

Barcode Check

Many major retailers require a GS1 Barcode Verification Report. Without a successful test your product may be rejected or may have to be relabelled. Regardless of what industry sector you supply, a verification test is a wise precaution to ensure customers receive your product on time, every time. Visit www.gs1au.org/our-services/barcode-check

Customer Support

To assist you through the process, the GS1 Australia Customer Support Team is available between 8:30am and 5:30pm AEST Monday-Friday (excluding public holidays) on **1300 227 263**. Alternatively, visit our website www.gs1au.org

About GS1 Australia

GS1 Australia is the leading provider of standards and solutions for over 20 industry sectors. We introduced barcoding to Australia in 1979 and today we enable more than 17,000 member companies, of all sizes, to become more efficient by implementing the GS1 system.

We bring businesses, associations and industries together. This blended community comes to GS1 Australia for advice, networking and solutions to their supply chain challenges. We partner with, and help showcase, members, solution providers and industry leaders to demonstrate and encourage supply chain best practice.

We offer a range of value adding services that support our members through their journey including consulting, solution selection and compliance.

GS1 Australia makes a real and tangible difference to businesses. We are integral to your supply chain success.

CONNECT WITH US



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