Fact Sheet

Version 1 August 2021

Barcode Quick Start

what you need to know

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 New Zealand by GS1 New Zealand.

- GS1 New Zealand is the only organisation authorised by GS1 Global to allocate and administer barcode numbers in New Zealand. New Zealand 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.
- Further information about the GS1 system can be found at *support.gs1nz.org/hc/en-us*
  Barcodes in this publication are examples for demonstration purposes only and are not true to size.

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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 known as a Global Trade Item Number (GTIN). Retail items commonly use a GTIN-13.

ITEM	PACKAGING	GTIN-13
Coloured Hair Conditioner	Bottle of 250ml	941234567 000 7

941234567000 7

GS1 Company Prefix and **Item Reference**

Check Digit Checks the validity of the entire number

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

Members of GS1 New Zealand should use My Products in their MyGS1 Portal for allocating GTINS to products to ensure GTINs are constructed correctly. Vist *Mygs1nz.org*

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.

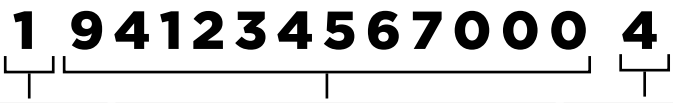
To assist you with the Check Digit Calculator please call our Customer Support Team on 0800 10 23 56 or ***gs1.org/services/check-digit-calculator***

Non-Retail Trade Items (Inners and Cartons)

List your inners and/or cartons and allocate a GTIN-14 (barcode number).

Non-retail items commonly use a GTIN-14 (or in special circumstances a GTIN-13).

ITEM	PACKAGING	GTIN-14
Coloured Hair Conditioner	Box of 24 Bottles of 250ml	1 941234567 000 4



Indicator Choose a digit between 0 and 8	**GS1 Company Prefix** and **Item Reference**	**Check Digit** Checks the validity of the entire number

Label these non-retail trade items with either ITF-14 or GS1-128 barcodes.
As shown below, these barcodes encode the GTIN-14.

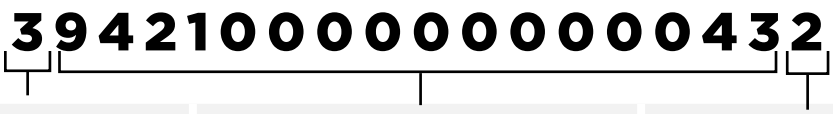
Example of ITF-14, which encodes a GTIN-14

Example of GS1-128, which encodes a GTIN-14 plus other Attribute Identifiers (AI)

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

Logistic Units (Pallets)

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



Extension Digit A number from 0 and 9. Increases capacity of the SSCC	**GS1 Company Prefix** and **Serial Reference**	**Check Digit** Checks the validity of the entire number

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

Example of GS1 Logistics Label
NOTE: Not to scale

STEP TWO

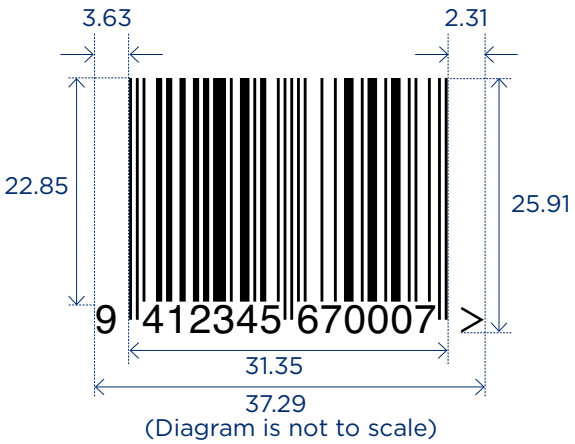
Barcode Specifications

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 size 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 in the GS1NZ User Guide 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



(Diagram is not to scale)

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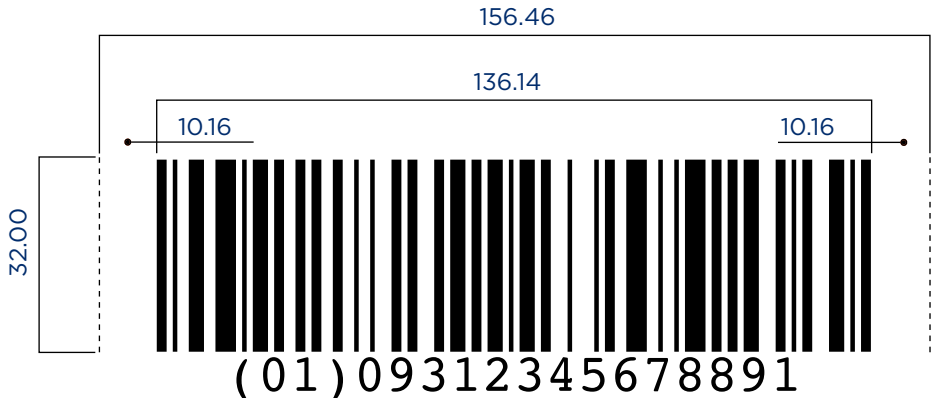
ITF-14 barcode (All measurements are in millimetres)				
MAGNIFICATION	**X-DIMENSION**	**WIDTH**	**HEIGHT**	**QUIET-ZONES**
62.5%	0.64	76.52	32.00	6.35
100%	1.02	122.43	32.00	10.16

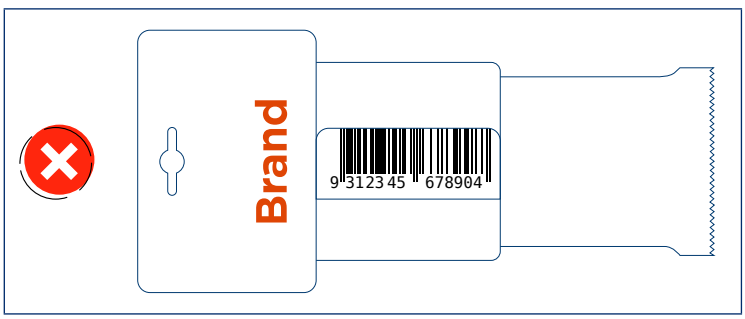
For full magnification ranges refer to GS1NZ User Guide

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



Height

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



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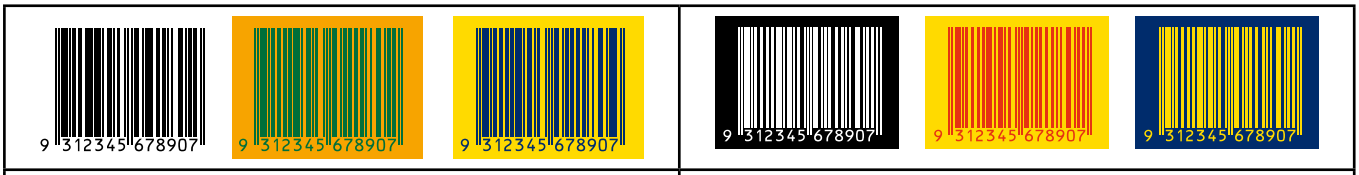
Colour

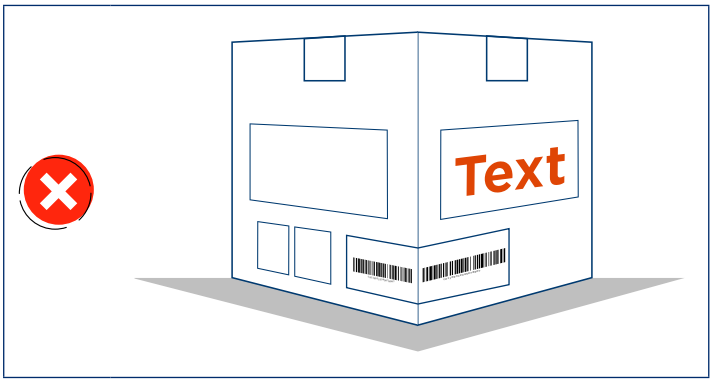
It is vital that the colour of the barcode and its background are recognisable by a scanner. A dark barcode on a light background is essential for scannability. Refer to the ***GS1NZ User Guide*** for examples of both scannable and non-scannable barcodes.

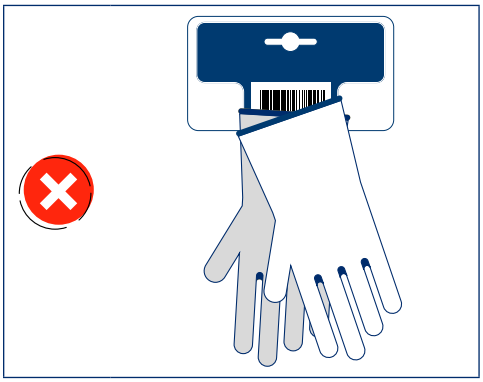


SCANNABLE Barcodes	**NON-SCANNABLE** Barcodes

Location

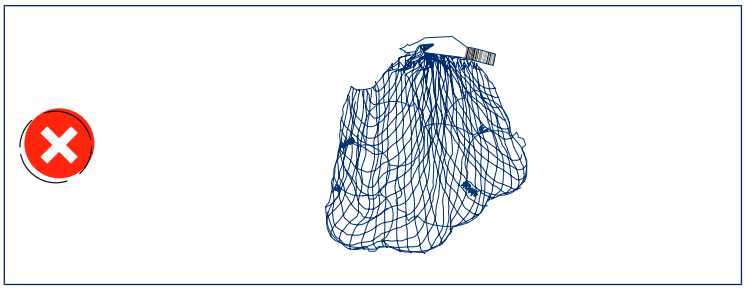
The location of the barcode on your product must be considered in your overall product design. GS1 New Zealand has a set of recommendations, however, the product must be considered in its final form before the barcode can be applied. Seams, seals, additional labels, corners, overlapping materials etc., can infringe on a barcode and make it illegible to the scanner. Logistic units (and any other pallets) also have location requirements. For more information refer to the GS1NZ User Guide.





Quiet Zones

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



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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 ***gs1nz.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 the barcode scans first time, every time.

Customer Support

To assist you through the process, the GS1 New Zealand Customer Support Team is available between 8:30am and 5:30pm Monday–Friday (excluding public holidays) on **0800 102 356**, by email ***support@gs1nz.org, or*** alternatively, visit our website ***gs1nz.org/contact***

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