



**International
Standard**

ISO 22742

**Packaging — Linear bar code and
two-dimensional symbols for
product packaging**

*Emballages — Code-barres linéaire et symboles bidimensionnels
pour emballage de produits*

**Third edition
2026-05**

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 122, *Packaging*.

This third edition cancels and replaces the second edition (ISO 22742:2010), which has been technically revised.

The main changes are as follows:

- added URL formats;
- preference on formats with concatenated fields;
- preference on 2D matrix symbologies.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Bar code marked product package labels are in widespread use in global industries. A number of different standards exist, each designed to meet the requirements of that specific industry sector. For effective and economic use within and between industry sectors, one common multi industry standard is a necessity.

A bar code marked product package label is designed to facilitate the automation of inventory, distribution, repair and point of purchase operations. The bar code information on the product package label can be used as a key to access the appropriate database, which contains detailed information about the product including information transmitted via electronic data interchange (EDI). In addition, a product package label can contain other information as agreed between the trading partners.

Two dimensional symbols can be included to assist moving greater amounts of product data from sender to recipient.

Labelers can include a code containing a URL on product package for marketing and information purposes by the labeler to enable direct access via smart phone.

Whereas ISO 15394^[2] is intended to support the transportation function within the supply chain (e.g. from the shipping dock, through the transportation processes, and to the receiving dock) and ISO 28219^[9] handles marking of the product itself, this document is intended to support the logistic functions preceding and following transportation. At the origin point, this document is designed for use from manufacture to storage, to picking and packing, to delivery to the shipping dock, and all associated inventory processes. At the destination point, it is designed for use from the receiving dock to order checking, to storage, to consumption, and to all associated inventory processes and reverse logistic processes.

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Packaging — Linear bar code and two-dimensional symbols for product packaging

1 Scope

This document:

- a) specifies the minimum requirements for the design of labels containing a linear bar code and two dimensional (2D) symbols on product packages to convey data between trading partners;
- b) provides guidance for the formatting on the label of data presented in a linear bar code, 2D symbols or human-readable form;
- c) provides specific recommendations regarding the choice of linear bar code and 2D symbologies, and specifies quality requirements and classes of bar code density;
- d) provides specific recommendations regarding both linear and 2D symbologies, which allow a broad choice for general use of scanning hardware (e.g. area imagers, linear imagers, single line laser scanners, and raster laser scanners);
- e) makes recommendations as to label placement, size and the inclusion of free text and any appropriate graphics.

This document supports item identification and supply chain processes, at the product package level, such as inventory control, picking, and point of use.

NOTE 1 ISO 15394^[2] supports the distribution and transportation business processes, so aiding the tracing and tracking of unique shipments.

NOTE 2 ISO 28219 addresses the direct part marking.

The purpose of this document is to establish the machine readable (e.g. bar code) and human-readable data content of labels applied to product packages.

Intended applications include, but are not limited to, inventory, warehouse management, maintenance and point of purchase.

While guidance is provided, specific label dimensions or marking areas and the location of the information are not defined in this document. Before implementing this specification, suppliers and manufacturers are advised to review and mutually agree on these details with their trading partners.

This document does not supersede or replace any applicable safety or regulatory marking or labelling requirements. It is intended to satisfy the product package requirements of numerous applications and industry groups. As such, it is applicable to a wide range of industries, each of which has specific implementation guidelines. This document is also applicable to any other labelling requirements.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country code*

ISO/IEC 15415, *Automatic identification and data capture techniques — Bar code symbol print quality test specification — Two-dimensional symbols*

ISO/IEC 15416, *Automatic identification and data capture techniques — Bar code print quality test specification — Linear symbols*

ISO/IEC 15459-3, *Information technology — Automatic identification and data capture techniques — Unique identification — Part 3: Common rules*

ISO/IEC 15418, *Information technology — Automatic identification and data capture techniques — GS1 Application Identifiers and ASC MH10 Data Identifiers and maintenance*

ISO/IEC 15434, *Information technology — Automatic identification and data capture techniques — Syntax for high-capacity ADC media*

ISO/IEC 15438, *Information technology — Automatic identification and data capture techniques — PDF417 bar code symbology specification*

ISO/IEC 16022, *Information technology — Automatic identification and data capture techniques — Data Matrix bar code symbology specification*

ISO/IEC 18004, *Information technology — Automatic identification and data capture techniques — QR code bar code symbology specification*

ISO/IEC 18975, *Information technology — Automatic identification and data capture techniques — Encoding and resolving identifiers over HTTP*

ISO/IEC 19762, *Information technology — Automatic identification and data capture (AIDC) techniques — Vocabulary*

IEC 61406-1, *Identification Link - Part 1: General requirements*

IEC 61406-2, *Identification link Part 2: Types/models, lots/batches, items and characteristics*

ANSI MH10.8.2, *Data Application Identifier Standard*

DIN 16598, *Syntax keyboard and Web compatible encoding of data elements in machine readable symbols applied with ASC Data Identifiers*

GS1, *GS1 General Specifications*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

Code 128

continuous, variable length, bar code symbology capable of encoding all 128 (code 0-127) ISO/IEC 646^[1] IRV characters, the 128 upper characters of ISO/IEC 8859-1^[14] (codes 128-255), and four non-data function characters

Note 1 to entry: See ISO/IEC 15417^[3] for the Code 128 symbology specification.

3.2

component

part, assembly or raw material that is a constituent of a higher-level assembly

3.3

country of origin

manufacturing country wherein the product obtained its present identity as a part, subassembly or finished product

3.4

data element title

part of the data area title for linear code that gives a brief description of the data element

EXAMPLE Part number and customer number.

Note 1 to entry: The data element can contain abbreviations.

3.5

Data Matrix

error correcting two-dimensional matrix symbology defined by ISO/IEC 16022

3.6

dot

localized region with a reflectance that differs from that of the surrounding surface

3.7

GS1 system

specifications, standards and guidelines administered by GS1

3.8

EAN/UPC

family of bar code symbols including EAN-8, EAN-13, UPC-A, and UPC-E bar code symbols as defined by ISO/IEC 15420

3.9

error correction

mathematical procedure that allows the detection and rectification of errors to take place

3.10

format

high capacity ADC medium comprising one or more *segments* (3.15)

Note 1 to entry: A format contains one format type.

3.11

format trailer

character used to identify the end of a format envelope

Note 1 to entry: This term is defined by ISO/IEC 15434.

3.12

PDF417

error correcting two-dimensional multi row symbology defined by ISO/IEC 15438

3.13

product package

first tie, wrap or container of a single item or quantity thereof that constitutes a complete identifiable pack

Note 1 to entry: A product package can be an item packaged singularly, multiple quantities of the same item packaged together, or a group of parts packaged together. For the purposes of this document, the term “product package” includes component packages and packaging intended for storage and transport.