

BS ISO 13106:2014



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Plastics — Blow-moulded polypropylene containers for packaging of liquid foodstuffs

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National foreword

This British Standard is the UK implementation of ISO 13106:2014.

The UK participation in its preparation was entrusted to Technical Committee PRI/75, Plastics and rubber film and sheets.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Plastics — Blow-moulded polypropylene containers for packaging of liquid foodstuffs

*Plastiques — Récipients en polypropylène moulés par soufflage pour
l'emballage de denrées alimentaires liquides*



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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

Plastics — Blow-moulded polypropylene containers for packaging of liquid foodstuffs

WARNING — This International Standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this International Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard provides the requirements of polypropylene resins intended for use in blow-moulded, round containers with capacities up to, and including two litres intended for the packaging of liquids for human consumption. This International Standard also provides tolerances on mass, dimensions, methods of sampling, testing, and performance requirements.

NOTE It is not to be implied that polypropylene resins are the only polymers suitable for these applications, as many other polymers, including PE-HD, PET, etc. are also suitable.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 472:2013, *Plastics — Vocabulary*

ISO 291:2008, *Plastics — Standard atmospheres for conditioning and testing*

ISO 1873-1, *Plastics — Polypropylene (PP) moulding and extrusion materials — Part 1: Designation system and basis for specifications*

ISO 1873-2, *Plastics — Polypropylene (PP) moulding and extrusion materials — Part 2: Preparation of test specimens and determination of properties*

ISO 15270, *Plastics — Guidelines for the recovery and recycling of plastics waste*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

3 Terms and definitions

For the purposes of this document, the following definitions of terms apply.

NOTE For detailed definitions of terms found in this International Standard, refer to ISO 472. Neck height (H) for containers produced using ISBM technology is the perpendicular distance from highest point of the neck face to bottom plane of the support ledge. The brimful capacity can also be measured using special volume testing equipment ([Annex B](#)). For bottles and lipped containers, nominal capacity is approximately 90 % of the brimful capacity.

3.1

extrusion blow-moulded container

container formed from an extruded parison of heat-softened thermoplastic, blow-moulded by the application of air pressure which forces it against the inside walls of a blow mould

3.2

injection blow-moulded container

container formed from an injection-moulded parison that is transferred, while hot, to a blow-mould to form the container

3.3

injection stretch blow-moulded container

container formed from an injection-moulded parison or reheated pre-form that is stretched prior to blow-moulding to impart bi-axial orientation

3.4

container body

principal part of a container, usually the largest piece containing the sides

Note 1 to entry: In bottles, the body is the main portion of the bottle without the neck.

3.5

shoulder

sloped area of a container between the neck area and the body of the container

3.6

neck

part of a container where shoulder cross-section area decreases to form the finish

3.7

neck finish

plastic forming the opening of a container and shaped to accommodate a specific closure

Note 1 to entry: Neck finish is a threaded, ribbed, or plain part of the container including sealing surface to accommodate a threaded or press fit closure, lug, and cap, heat sealing gasket or liner and the tamper evidence features.

3.8

seal surface

lip portion of the neck finish that makes contact with the sealing gasket or liner to form a seal

3.9

closure

device used to seal off the opening of the container for product containment and providing a barrier to external contaminants

3.10

overall height

OH

height of a finished empty container at its highest point excluding the closure and fitment

3.11

diameter

D

external diameter of the finished empty container at a specified height, expressed as the mean of the two perpendicular diameters, or as the circumference divided by 3,141 6 at the same specified height

3.12

neck height

H

perpendicular distance from the highest point of the plane including the neck face to the nearest point of the finished container shoulder

3.13

external neck diameter

E

external diameter of the neck, excluding thread, measured as the mean of two perpendicular diameters avoiding the part line

3.14

internal neck diameter

I

minimum internal diameter of the neck, whether it is parallel, tapered, or internally threaded

3.15

thread diameter

T

external diameter of the neck thread measured as the mean of two perpendicular diameters avoiding the parting line

3.16

neck ovality

difference between the maximum and the minimum neck diameters

3.17

fill level

level to which a container shall be filled to achieve designated quantity of the content or nominal capacity

3.18

head space

space between the fill level of a container and the seal surface

3.19

brimful capacity

volume of liquid held by the container when filled to the point of overflowing while standing on a flat horizontal level with all closures removed

Note 1 to entry: The brimful capacity, also called as “overflow capacity”.

3.20

nominal capacity

volume of the liquid foodstuff the container is intended to hold

3.21

conditioning atmosphere and test temperature

atmosphere in which a sample or test specimen is kept before being subjected to a test shall be in accordance with ISO 291, unless otherwise agreed upon by the interested parties, e.g. for testing at high or low temperatures

Note 1 to entry: The preferred set of conditions in ISO 291 is standard atmosphere (23 ± 2) °C and (50 ± 2) % relative humidity. Other set of conditioning atmosphere as mentioned in ISO 291 can also be used, provided such conditioning is reported.

4 Raw material

The grade designation(s) described in ISO 1873-1 and ISO 1873-2 for polypropylene shall be used to describe the raw material.

Since polypropylene is suitable for use in blow-moulded containers, the specification of grades to be used will depend on many factors including the specific application, type of liquid foodstuff intended to be packed and which kind of filling method to be used, filling capacity of container, container design, and conversion process to be used. In all cases, the choice of a specific grade shall be determined by its suitability for the intended application and agreement between the interested parties.