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Vacuum bottles

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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by All Japan Vacuum Bottle Association/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS S 2006:2016**), which has been technically revised.

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NOTE Based on Article 9 of the Supplementary Provisions to the Unfair Competition Prevention Act etc., any submission of proposal, or employment of procedures such as deliberation by the Japanese Industrial Standards Committee under the previous Industrial Standardization Act shall be deemed to have been conducted pursuant to the provision of Article 12, paragraph (1) of the revised Industrial Standardization Act.

Blank

Vacuum bottles

1 Scope

This Japanese Industrial Standard specifies requirements for the vacuum bottles comprising a double-wall vacuum glass vessel (hereafter referred to as an inner bottle), and vacuum bottles comprising a double-wall vacuum stainless steel vessel (hereafter referred to as a vessel), which are mainly intended for heat and cold insulation of beverages and food (hereafter referred to as “glass vacuum bottles” and “stainless steel vacuum bottles”, respectively).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

- JIS G 3141 *Cold-reduced carbon steel sheet and strip*
- JIS G 3303 *Tinplate and blackplate*
- JIS G 4305 *Cold-rolled stainless steel plate, sheet and strip*
- JIS H 3100 *Copper and copper alloy sheets, plates and strips*
- JIS H 4000 *Aluminium and aluminium alloy sheets, strips and plates*
- JIS H 8617 *Electroplated coatings of nickel and chromium*
- JIS K 6718-1 *Plastics—Poly(methyl methacrylate) sheets—Types, dimensions and characteristics—Part 1: Cast sheets*
- JIS K 6718-2 *Plastics—Poly(methyl methacrylate) sheets—Types, dimensions and characteristics—Part 2: Extruded sheets*
- JIS K 6744 *Polyvinyl chloride prepainted and laminated metal sheet and strip*
- JIS L 0803 *Standard adjacent fabrics for staining of colour fastness test*
- JIS L 0848 *Test method for colour fastness to perspiration*
- JIS R 3502 *Test method of glass apparatus for chemical analysis*
- JIS S 2010 *Aluminium cookwares*
- JIS S 2029 *Plastics Table Wares*
- JIS Z 1522 *Pressure sensitive adhesive cellophane tapes*
- JIS Z 8703 *Standard atmospheric conditions for testing*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1

vacuum bottle

bottle using a double-wall vacuum glass vessel as its inner bottle, or bottle using a double-wall vacuum stainless steel vessel as its vessel, the former being intended for

table-top use only, and the latter, for both portable and table-top use as well as for lunch container

3.2

jacket

entirety of parts constituting the outer shell of a vacuum bottle, including the body, cup(s), stopper cover, cover (upper cover), and bottom

In a stainless steel vacuum bottle, the outer cylinder serves as a jacket.

3.3

body

part where an inner bottle or a vessel is installed

3.4

inner bottle

glass container having a double-wall vacuum structure

3.5

vessel

stainless steel container having a double-wall vacuum structure consisting of inner and outer cylinders

3.6

cover (upper cover)

that part of the body of a table-top vacuum bottle or lunch box vacuum bottle which is used for opening and closing the jacket

3.7

cup

container attached to the body of a general-type portable vacuum bottle, which is used for serving a beverage

3.8

stopper

generic term for inner stopper, stopper cover, spout, etc.

3.9

inner stopper

part for closing the opening of an inner bottle or a vessel

In a general-type table-top vacuum bottle, this may be an easy-pour stopper which enables the content to be poured without removing the stopper and just by tilting the bottle.

3.10

stopper cover

part of the body of a direct-drink type portable vacuum bottle used for opening or closing the jacket, as well as closing the opening of the vessel

A direct-drink type is a design where the drink is had directly from the spout after removing the stopper.

3.11

spout

part of the body of a direct-drink type portable vacuum bottle, in the shape of a cylinder, straw, etc., on which the user's mouth is rested for the purpose of directly drinking from the bottle

3.12

packing

generic term for cup rubber, inner stopper packing, stopper packing, etc.

3.13

pouring mechanism

mechanism provided in a pneumatic-pressure type table-top vacuum bottle, which allows the beverage in the inner bottle or the vessel to be poured without lifting the body

3.14

bellows

part of the pouring mechanism that serves as an expansion pipe joint, whose bellows structure generates air pressure by being compressed

3.15

cold-only vacuum bottle

vacuum bottle intended primarily for cold insulation, and labelled against use with hot beverages

This type falls under the category of direct-drink type portable vacuum bottles.

3.16

normal use condition

state of a glass or stainless steel vacuum bottle being fitted with all the necessary parts including the cup, spout, stopper cover, inner stopper, cover (upper cover), etc. and of a lunch box vacuum bottle being fitted with all the accessories, and placed in the upright position

3.17

food container

inner container of a lunch box vacuum bottle mainly intended for containing food

3.18

rice container

container housed within the vessel of a lunch box vacuum bottle, mainly intended for containing rice

3.19

soup container

container housed within the vessel of a lunch box vacuum bottle, mainly intended for containing soup

It provides leak-proof seal by being used with its cover.

4 Classification

Vacuum bottles are classified according to material, namely, glass and stainless steel, and further according to use, namely, table-top, portable, and lunch box.

- a) **Glass vacuum bottles** The glass vacuum bottles are classified as table-top use, and as shown in Table 1.

Table 1 Classification of glass vacuum bottles (table-top use)

Classification	Main use and structure
General type	Mainly intended for indoor use, usually having an inner stopper and a handle on the jacket. Pouring of the content is enabled by tilting the body.
Pneumatic-pressure type	Mainly intended for indoor use, usually having a cover (upper cover) and a carrying handle on the jacket, and having the pneumatic-pressure pouring mechanism in which the bellows, compressed by the pushing or lever operation, generates the air pressure required for pushing out the liquid to enable pouring.

- b) **Stainless steel vacuum bottles** Stainless steel vacuum bottles are classified into portable, table-top and lunch box uses as shown in Table 2.

Table 2 Classification of stainless steel vacuum bottles

Classification		Main use and construction
Portable	General type	Intended for both indoor and outdoor use, usually having a cup on the jacket, optionally provided with a shoulder strap or similar accessory.
	Direct-drink type (including cold-only vacuum bottles)	Intended for both indoor and outdoor use, not having a cup. Allows drinking directly from the bottle through the spout after removing the stopper.
Table-top	General type	Mainly intended for indoor use, usually having an inner stopper, and a handle or a carrying handle on the jacket. Pouring of the content is enabled by removing the stopper and tilting the body (the stopper may be an easy-pour stopper).
	Pneumatic-pressure type	Mainly intended for indoor use, usually having a cover (upper cover) and a carrying handle on the jacket, and having the pneumatic-pressure pouring mechanism in which the bellows, compressed by the pushing or lever operation, generates the air pressure required for pushing out the liquid to enable pouring.
Lunch box	General type	Intended for both indoor and outdoor use, housing inner containers such as soup container and rice container inside its vessel, usually having a cover (upper cover) on the jacket and optionally provided with a shoulder strap or similar accessory.
	Direct-containing type	Intended for both indoor and outdoor use, designed to contain soup or other beverage, or food directly in its vessel, usually having an inner stopper on the jacket.

5 Names of principal parts

- a) **Glass vacuum bottle** The names of principal parts of a glass vacuum bottle shall be as given in Figures 1 and 2, and Table 3.

Table 3 Names of principal parts of glass vacuum bottle

No.	Name
①	Cover (upper cover)
②	Upper cover lock
③	Hinge
④	Push button or lever
⑤	Bellows
⑥	Air inlet
⑦	Air outlet
⑧	Inner stopper
⑨	Inner stopper packing
⑩	Pumping pipe
⑪	Pumping pipe protector (protection cover)
⑫	Discharge pipe
⑬	Handle
⑭	Carrying handle
⑮	Mouth ring (may be made of plastic)
⑯	Cup rubber
⑰	Inner bottle
⑱	Inner bottle cover
⑲	Shell
⑳	Bottom
㉑	Fastening screw