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QB/T 1394-XXXX

Replace QB/T 1394-2014

Canned tomatoes

番茄罐头

(English Translation)

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Foreword

SAC/TC 64 is in charge of this English translation. In case of any doubt about the contents of English translation, the Chinese original shall be considered authoritative.

This document is drafted in accordance with the rules given in the GB/T 1.1-2020 *Directives for standardization Part 1: Rules for the structure and drafting of standardizing documents*.

This document replaces QB/T 1394-2014 (*Canned tomatoes*) in whole. In addition to a number of editorial changes, the following technical deviations have been made with respect to the QB/T 1394-2014 (*Canned tomatoes*) :

- a) the classification of canned tomatoes has been changed (see 4 of this edition vs. Chapter 4 of the 2014 edition);
- b) the sensory requirements have been changed (see 5.2 of this edition vs. 5.2 of the 2014 edition);
- c) the requirements for solid content and soluble solid content have been changed (see 5.3 of this edition vs. 5.3.2 and 5.3.6 of the 2014 edition);
- d) the maximum levels of contaminants, microbiological indicators, requirements for use of food additives have been deleted (see 5.4, 5.5, 5.6, 6.8 and 6.9 of the 2014 edition);
- e) the food safety requirements have been added (see 5.4 of this edition);
- f) the test method of lycopene content has been changed (see 6.4 of this edition vs. 6.5 of the 2014 edition);
- g) the test method for enumeration of moulds has been changed (see 6.8 of this edition vs. 6.9.2 of the 2014 edition);
- h) the marking requirements have been changed (see 8 of this edition vs. 8 of the 2014 edition);.

This document was proposed by China National Light Industry Council.

This document was prepared by SAC/TC 64 (the National Technical Committee 64 on Food Industry of Standardization Administration of China).

The previous editions of this part are as follows:

- The first edition was issued in 1976 as QB 633-1976 (*Canned tomatoes in tomato juice*);
- The first edition was revised in 1991 and changed to the recommended industry standard QB/T 1394-1991 (*Canned tomatoes in tomato juice*),
- The second revision was issued in 2014;
- This is the third revision.

Canned tomatoes

1 Scope

This document specifies the raw and auxiliary materials, sensory requirements, physicochemical indicators, food safety and other requirements of canned tomatoes, describes the corresponding test methods, specifies the contents of inspection rules and marking, packaging, transportation and storage, and gives the product classification and code convenient for technical regulations.

This document is applicable to the production, inspection and sales of canned tomatoes. This document is not applicable to the production, inspection and sales of canned tomato paste.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments (excluding corrections), or revisions, of any of these publications do not apply to this standard. However, parties to agreements based this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

GB 4789.15-2016 National food safety standard Food microbiological examination: Enumeration of moulds and yeasts

GB 5009.237 National food safety standard Determination of pH value of food

GB 5749 Standards for drinking water quality

GB 7098 National food safety standard Canned foods

GB/T 10786 Test methods of canned foods

GB 12456 National food safety standard Determination of total acid in foods

GB/T 14215-2021 General quality requirements for canned tomato paste

GH/T 1193 Tomato

QB/T 1006 Inspection rules for canned food

QB/T 4631 Packaging, labeling, transportation and storage for canned food

3 Terms and Definitions

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

3.1

Canned tomatoes

Canned food made of tomato (*Lycopersicon/Lycopersicum esculentum* P. Mill) which is pretreated, peeled or not peeled, whole or cut, canned, added with or without original juice or flavored juice, and then sealed, sterilized, cooled or aseptic filled

3.2

Pedice

The connecting part of fruit and fruit stalk

3.3

Splitting tomatoes

Tomato fruit whose flesh is broken and seeds flow out

3.4

Precipitate

The phenomenon of clear juice precipitation on the upper layer

3.5

Blemishes

Abnormal parts different strongly in color and/or texture from the normal tomato tissue

4 Product Classification and Code

4.1 Product classification

4.1.1 Classification according to shape of solids

According to the shape of the solids in the final product, the product can be classified into:

—Canned whole tomatoes: canned tomatoes made of tomatoes which keep their initial shape;

—Canned wedge tomatoes: canned products made of tomatoes evenly cut into four equal parts from the center;

—Canned sliced tomatoes: canned products made of tomatoes cut axially with a uniform thickness;

—Canned diced tomatoes: canned products made of tomatoes cut into cube or block with a size of not less than 10 mm;

—Canned chopped tomatoes: canned products made of tomatoes cut into cube or block with a size of less than 10 mm.

4.1.2 Classification according to flavoring method

According to different flavoring methods, the product can be classified into:

—Original flavor (original juice) type: canned tomatoes made of tomatoes, with the addition of water, tomato paste and tomato juice, with or without addition of edible salt, calcium salt and citric acid (the addition amount of each auxiliary material shall not exceed 0.1% of the net weight of the final product);

—Flavoring type: canned tomatoes made of tomatoes, with the addition of water, tomato paste, tomato juice, supplemented with salt, white granulated sugar, and fresh or physically preserved onion, pepper, celery and other vegetable or spice ingredients (the total addition amount of auxiliary materials shall not exceed 10% of the net weight of the final product), and with the addition of citric acid and other additives.

4.2 Product code

The product may be marked according to GB/T 41900, with the reference to Table 1 based on actual needs.

Table 1 Canned tomato product code

Items	Product code	
	Original flavor (original juice)	Flavoring type

	type	
Canned whole tomatoes	807	807F
Canned diced tomatoes	807 1	807F 1
Canned wedge tomatoes	807 2	807F 2
Canned sliced tomatoes	807 3	807F 3
Canned chopped tomatoes	807 4	807F 4

5 Requirements

5.1 Raw and auxiliary materials

5.1.1 Tomatoes

Tomatoes shall be fresh or well refrigerated, moderately ripe, without black heart fruit, and shall as specified in the requirements of GH/T 1193.

Note: Black heart fruit refers to tomato with black heart due to physiological variation during fruit growth.

5.1.2 Water

Shall as specified in the requirements of GB 5749.

5.1.3 Other raw and auxiliary materials

Shall as specified in requirements of corresponding standards.

5.2 Sensory requirements

Shall as specified in the provisions of Table 2.

Table 2 Sensory requirements

Items	Top-graded		Qualified	
	Canned whole tomatoes	Canned wedge tomatoes, sliced tomatoes, diced tomatoes, chopped tomatoes	Canned whole tomatoes	Canned wedge tomatoes, sliced tomatoes, diced tomatoes, chopped tomatoes
Color	With the proper color of the product; uniform in color of tomatoes in the same can		With the proper color of the product; relatively uniform in color of tomatoes in the same can	
Taste and odor	With the proper taste and flavor of canned tomato, without peculiar smell			
Structural state	Generally complete in shape; there is no obvious loss or serious exposure for seed and core and the pedicel that does not affect the appearance is allowed; roughly uniform in size; there can be a small amount of precipitate; there can be a small amount of seeds; Splitting tomatoes do not exceed 20%. The canned peeled tomato can have tomato skin residue, and the total developed area of tomato skin in each kilogram of finished product does not exceed 15cm ²	The contents of each can are roughly uniform in size, and a trace amount of pedicel that does not affect the appearance is allowed. The canned peeled tomato can have tomato skin residue, and the total developed area of tomato skin in each kilogram of finished product does not exceed 15cm ²	Relatively complete in shape; there is no obvious loss or serious exposure for seed and core and the pedicel that does not affect the appearance is allowed; relatively uniform in size; there can be a small amount of precipitate for original tomato juice; there can be a small amount of seeds; splitting tomatoes do not exceed 40%. The canned peeled tomato can have tomato skin residue, and the total developed area of tomato skin in each kilogram of finished product does not exceed 30cm ²	The contents of each can are roughly uniform, and a trace amount of pedicel that does not affect the appearance is allowed. The canned peeled tomato can have tomato skin residue, and the total developed area of tomato skin in each kilogram of finished product does not exceed 30cm ²
Blemishes	The total developed area of blemish in each kilogram of finished product does not exceed 3.5cm ²		The total developed area of blemish in each kilogram of finished product does not exceed 7cm ²	
Impurity	No visible foreign impurities by normal vision			

5.3 Physicochemical indicators

Shall as specified in the provisions of Table 3.

Table 3 Physicochemical indicators

Items	Indicators			
	Top-graded		Qualified	
	Canned whole tomatoes, canned wedge tomatoes	Canned sliced tomatoes, diced tomatoes, chopped tomatoes	Canned whole tomatoes, canned wedge tomatoes	Canned sliced tomatoes, diced tomatoes, chopped tomatoes
Solid content ^a , (%) \geq	55	60 ^b	Not lower than the label value	
Soluble solid content, (%) \geq	4.5			4.0
Lycopene content, mg/100 g \geq	6			
pH \leq	4.5			

Total acid [°] (as citric acid), (%)	≤	0.6
^a The average solid content of each batch of products shall not be lower than the label value. ^b For canned diced tomatoes with net content ≤ 300 g, the solid content of the top-graded products shall be ≥ 55%. ^c For total acid, only applicable to original flavor (original juice) type canned tomatoes, not applicable to flavoring-type canned tomatoes.		

5.4 Net content

Shall as specified in relevant standards and provisions. The average net content of each batch of products shall be not lower than the label value.

5.5 Food safety

5.5.1 Shall as specified in the provisions of GB 7098.

5.5.2 Mould count (% visual field) shall not be greater than 30.

6 Test Methods

6.1 Sensory requirements

Inspect according to the method specified in GB/T 10786.

6.2 Solid content

Inspect according to the method specified in GB/T 10786.

6.3 Soluble solid content

Inspect according to the method specified in GB/T 10786.

6.4 Lycopene content

After the sample is homogenized, weigh 0.5 g~1.2 g, accurate to 0.1 mg, and place in a 10-mL small beaker. Other steps follow the method specified in Annex B of GB/T 14215-2021.

6.5 pH

The sample is homogenized and pH is tested according to the method specified in GB 5009.237.

6.6 Total acid

The sample is homogenized and total acid is tested according to the method specified in GB 12456.

6.7 Net content

Inspect according to the method specified in GB/T 10786.

6.7 Enumeration of moulds

After the sample is homogenized, it shall be tested according to the Method II in GB 4789.15-2016. When the concentration of the sample is lower than 8.8%, the reading shall be directly checked by microscope.

6.8 Other food safety indicators

Inspect according to the method specified in GB 7098.

7 Inspection Rules

Inspection rules shall as specified in the provisions of QB/T 1006. Sensory requirements, net content, solid content, soluble solid content, lycopene content, pH, total acid, commercial sterility and enumeration of moulds are delivery inspection items.

8 Marking, Packaging, Transportation and Storage

Shall as specified in relevant provisions of QB/T 4631. The label shall, according to 4.1.1, indicate the product type and solid content; peeling or not shall also be marked for canned whole tomato.

Reference

- [1] GB/T 41900 Code for canned foods
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