ICS 67.120.30
X73

中 国 罐 藏 食 品 行 业 团 体 标 准

T/CCFIA 03001-2019

代替 T/CCFIA 001-2016、T/CCFIA 002-2016

鲭鱼罐头

Canned mackerel

2019-1-10 发布　　2019-3-10 实施

中国罐头工业协会　发布

前　言

本标准按照GB/T 1.1-2009给出的规则起草。

本标准代替T/CCFIA 001-2016《盐水鲭鱼罐头》、T/CCFIA 002-2016《茄汁鲭鱼罐头》，与原团体标准相比，除编辑性修改外主要技术变化如下：

----标准名称统一修改为“鲭鱼罐头”；

----修改产品固形物含量要求；

----增加组胺限量要求；

----增加规范性附录A。

本标准由中国罐头工业协会提出并归口。

本标准主要起草单位：福建紫山集团股份有限公司、宁波佳必可食品有限公司、荣成石岛广信食品有限公司、漳州市陈宇贸易有限公司、青岛海博苑进出口有限公司、漳州市港昌工贸有限公司、龙海海昌食品有限公司、宁波今日食品有限公司。

本标准主要起草人：廖建福、林佩茂、孙义明、陈俊兴、张维真、黄美端、陈毅杰、陈义方。

鲭鱼罐头

1 范围

本标准规定了鲭鱼罐头的术语和定义、产品分类、技术要求、检验方法、检验规则、包装、运输和贮存。

本标准适用于以鲜、冻良好的鲭鱼为原料，经加工处理、装罐、调味、密封、杀菌、冷却制成的罐藏食品。

2 规范性引用文件

下列文件对于本文件的应用是必不可少的。凡是注日期的引用文件，仅注日期的版本适用于本文件。凡是不注日期的引用文件，其最新版本（包括所有的修改单）适用于本文件。

GB 2733 食品安全国家标准 鲜、冻动物性水产品

GB 2760 食品安全国家标准 食品添加剂使用标准

GB 2762 食品安全国家标准 食品中污染物限量

GB 4789.26 食品安全国家标准 食品微生物学检验 商业无菌检验

GB 5009.44 食品安全国家标准 食品中氯化物的测定

GB 5009.208 食品安全国家标准 食品中生物胺的测定

GB/T 5461 食用盐

GB 5749 生活饮用水卫生标准

GB 8950 食品安全国家标准 罐头食品生产卫生规范

GB/T 10786 罐头食品的检验方法

GB/T 14215 番茄酱罐头

QB/T 1006 罐头食品检验规则

QB/T 4631 罐头食品包装、标志、运输和贮存

3 术语和定义

下列术语和定义适用于本文件。

3.1

破碎 crush

鱼体破裂、断开、碎散，失去原有形态。

3.2

血蛋白 blood protein

粘附在鱼肉表面、悬浮于液体中或沉积于空罐内的血蛋白凝固物。

3.3

最大装罐量 max filling weight

制定杀菌规程时，设定的高于正常装罐量的装罐质量。一般应高出5%，以确保产品安全性。

3.4

硫化铁 ferric sulphide

内容物中的含硫化合物与罐壁铁基板作用而产生的疏松易脱落的黑色物质。

4 产品分类

根据产品配料方式不同，鲭鱼罐头分为盐水鲭鱼罐头、茄汁鲭鱼罐头、油浸鲭鱼罐头、其他调味鲭鱼罐头。

5 技术要求

5.1 原辅材料

5.1.1 鲭鱼

应符合GB 2733的规定。

5.1.2 食用盐

应符合GB/T 5461的规定。

5.1.3 水

应符合GB 5749的规定。

5.1.4 番茄酱

应符合GB/T 14215的规定。

5.1.5 其他原辅料

应符合其他相应标准的规定。

5.2 感官要求

应符合附录A的要求。

5.3 理化要求

应符合表1的要求。

表1 理化要求

项目		要求
固形物含量（%） ≥		50
氯化钠含量	盐水、茄汁和油浸类（%） ≤	3.5
	其他调味类（%） ≤	6.5

表 1（续）

项目	要求
组胺（mg/kg） ≤	200[a]
污染物限量	应符合 GB 2762 的规定
微生物限量	应符合罐头食品商业无菌要求，按 GB 4789.26 规定的方法检验
食品添加剂	应符合 GB 2760 的规定
[a] 单罐组胺含量应不超过 200mg/kg，每批平均值应不超过 100 mg/kg。	

5.4 产品生产过程及工艺要求

5.4.1 生产过程卫生规范

应符合GB 8950的要求。

5.4.2 加工工艺要求

5.4.2.1 加工过程时间要求

蒸煮前加工流程时间控制：环境温度若不超21℃，流程时间不超过24h。环境温度若超过21℃，流程时间不超过12h。

5.4.2.2 解冻

解冻后鱼体中心温度不应大于4℃。

5.4.2.3 处理

去头去尾去内脏，完全清除内脏，必要时对鱼体剪除肛门，对鱼体开腹，以手工单体清洗或空气鼓泡清洗干净。

5.4.2.4 盐浸

充分盐浸，使鱼体脱水。

5.4.2.5 装罐

装罐量不能超过最大装罐量。

5.4.2.6 预煮

预煮时间为15min~25min，预煮温度应不低于95℃。

6 检验方法

6.1 感官

按附录A规定的方法检验。

6.2 固形物

按GB/T 10786规定的方法检验。

6.3 氯化钠

按GB 5009.44规定的方法检验。

6.4 组胺

按GB 5009.208规定的方法检验。

7 检验规则

应符合QB/T 1006的规定，其中感官指标、净含量、固形物含量、氯化钠、微生物限量为出厂检验项目。

8 包装、标志、运输、贮存

应符合QB/T 4631的规定。

附 录 A
（规范性附录）
感官品质评价

A.1 总则

本文件是为保证产品在符合本标准的其他理化要求基础上，评价产品感官品质达到消费者的可接受程度和满意度。

本文件所采用的系统评价为鲭鱼罐头感官品质评价提供了基本判断依据。

本文件旨在为感官品质评价体系提供详细指导以满足感官评价要求。

A.2 基本要求

A.2.1 按条款A.5提供的计分体系，对每罐进行感官特征评估（外观，气味，滋味，组织形态）。

A.2.2 对全部样品的感官品质进行评分，并进行计算，满分20分。

A.2.3 根据每罐产品的平均得分，判定为不合格品、合格品、优级品评判。

A.3 基本检测条件

A.3.1 检测室：应单独设立，室内有充足光线，温度适合，并保持通风。

A.3.2 检验员：应有正常的味觉、嗅觉和视觉。对产品熟悉，并经过至少10学时的感官训练课程培训合格。检验员连续感官检验时间应不超过2小时。

A.4 步骤

A.4.1 所需的材料用品

除感官评价基本材料和用具外，还应准备以下材料和用具：

a)开罐器

b)白盘（白色的瓷盘、塑料盘等）

c)不锈钢勺

d)一次性信封（必要时）

e)评分表

A.4.2 样品的准备

A.4.2.1 抽样：按 QB/T 1006 要求进行抽样。

A.4.2.2 每罐样品都要有可区别的标识或编号。

A.4.2.3 印有罐码的各罐之间应留有足够的空间。相同批次的样品可与同一个编码的白瓷盘

平行摆放。

A.4.2.4 用开罐刀开罐，将固形物与液体小心倒进已编码的白盘中。倒出过程要特别小心，以免鱼的完整性被破坏。小心将鱼铺开。每个白盘配一把勺子。

A.4.3 样品评估

A.4.3.1 每罐应该按以下感官特征进行评估，以便能够使用条款 A.5 的评级标准：

a) 外观（总体颜色，物理缺陷）；

b) 气味；

c) 滋味；

d) 组织形态（质地、质感）。

各项感官特征进行独立评估，得分为 0-5 分。

A.4.3.2 当评估外观的时候，观察样品呈现的形式，包装方式，规格大小，内容物状态。

A.4.3.3 当评估气味时，应注意以下事项：

a) 在开罐 1min~5min 内完成气味评估；

b) 所有内容物都应该一起考虑进去；

c) 按 1:3 的比率从每罐里面选取鱼，用手指将这些所选的鱼轻轻捣碎，闻鱼的气味，基于总体对气味做评分报告；

d) 如果鱼发现有不可接受气味，检测其他样品，以便全面评价。

A.4.3.4 当评价滋味时，应注意以下事项：

a) 滋味，应符合鱼肉入口时的气味；

b) 从每罐中以 1:3 的比率选取鱼肉；

c) 充分咀嚼样品，评估它的滋味，从总体评分。

A.4.3.5 当评估组织的时候，应注意以下事项：

a) 从每罐中按 1:3 的比率选取鱼肉；

b) 将鱼肉放于单独盘中，腹部朝上，用勺子将鱼分成两块鱼片。观察外观；

c) 将其中一片鱼肉捣开，用手指轻压，感受其质地，通过压碎感受组织；

d) 从鱼肉里面挑出鱼刺，按压并感受组织质地；

e) 从总体上打分评价；

f) 如果受检产品组织不可接受，检测其他，然后给予总体评价。

A.5 样品评分

A.5.1 外观

产品色泽、特征，鱼的形状和缺陷均应全面考虑。物理方面的缺陷包括：淤伤、破碎、压碎、鱼头残留、鱼鳍、脱皮、寄生虫以及外来杂质。评分要求见表 A.1。

表 A.1 外观评分要求

描述	评分
典型的金属色、银灰色鱼皮，无破碎、压碎、鱼头残留、鱼鳍、破落的鱼皮、内脏，无明显淤伤及脱皮，无外来杂质，无使用其他鱼种，无寄生虫，无硫化铁。	5
基本达到金属色、银灰色鱼皮，无外来杂质，无使用其他鱼种。允许轻微淤伤、脱皮、破碎、压碎、鱼头残留、鱼鳍、内脏，寄生虫[a]，硫化铁。	4
缺少典型的金属色、银灰色鱼皮，无外来杂质，轻微马口铁罐硫化铁，但未污染内容物。可接受范围内的淤伤、破碎、压碎、鱼头残留、鱼鳍、内脏、脱皮、寄生虫[b]。	3
无外来杂质，马口铁罐硫化铁轻微污染内容物。一定量的淤伤、破碎、压碎、鱼头残留、鱼鳍、内脏、脱皮、寄生虫[c]。	2→1
大量的淤伤、破碎、压碎、鱼头残留、鱼鳍、内脏、脱皮、寄生虫[d]、外来杂质，明显马口铁罐硫化铁污染。	0
注：硫化铁仅适用于马口铁包装产品。	
[a] 存在微量，普通消费者也许发现不了，可能含有 1 条肉眼可见经灭活的寄生虫。 [b] 可能会注意到，但是大部分消费者不会太抵触，可能含有 2 条肉眼可见经灭活的寄生虫。 [c] 大部分消费者不能接受，可能含有 3 条及以上肉眼可见经灭活的寄生虫。 [d] 含有团状寄生虫	

A.5.2 气味

评分要求见表 A.2。

表 A.2 气味评分要求

描述	评分
具有新鲜鲭鱼罐头应有的温和典型的好气味。	5
具有鲭鱼罐头应有的气味。	4
有轻微异味[a]，如酸味、烧焦味、焦糖味等。	3
有轻微不可接受的气味[b]，如金属味，腐臭味，霉味等。	2→1
有明显不可接受气味，金属味，腐臭味，非常强烈的氧化味道	0
[a] 大部分人可能不会注意到，即使注意到也不会太反感抵触。 [b] 可以注意到，消费者也许不会反感。	

A.5.3 滋味

评分要求见表A.3。

表A.3 滋味评分要求

描述	评分
具有新鲜的鱼罐头应有的较好滋味。	5
具有鱼罐头应有的滋味。	4
有轻微的变味[a]如金属味、木头味、草味、烧焦味等味道。	3
有轻微不可接受[b]的金属味苦味等味道。	2→1
有不可接受的腐臭味、苦味、硫磺味等明显异味。	0
[a]大部分人可能不会注意到，即使注意到也不会太反感抵触。 [b]可以注意到，消费者也许不会反感。	

A.5.4 组织形态

评分要求见表A.4。

表A.4 组织形态评分要求

描述	评分
肉质紧密，软硬适度，无硬骨	5
肉质较紧密，软硬较适度，无硬骨	4
肉质轻微松散，有用大拇指和食指不易弄碎硬鱼骨[a]	3
鱼肉松散、破碎，有用大拇指和食指不能弄碎的硬鱼骨[b]	2→1
鱼肉呈浆糊状，有用大拇指和食指不能弄碎的硬鱼骨	0
[a]大部分消费者不反感 [b]消费者反感	

A.6 判定

A.6.1 计算每罐感官分数的总得分：每个项目的原始得分X相应的系数，计算得分。（外观检验系数为0.8，气味检验系数为1.2，滋味检验系数为1.2，组织检验系数为0.8）

A.6.2 基于每罐总得分判断每罐是否为不合格品、合格品和优级品。判定规则如下：

a）每罐总得分≥16 时，则为优级品；

b）每罐总得分≥12 时，则为合格品；

c）每罐总得分＜12 时，则为不合格品。

A.6.3 记录合格品和不合格品的数量，按QB/T 1006的判定标准判定批次产品等级优级品、合格品、或不合格品。

ICS 67.120.30
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China Canned Food Industry Group Standard

T/CCFIA 03001-2018

Replace T/CCFIA 001-2016 & T/CCFIA 002-2016

Canned mackerel

Issue date: 2019-1-10 Implementation date: 2019-3-10

Issued by China Canned Food Industry Association

FOREWORD

This standard is drafted in accordance with the rules given in the GB/T 1.1—2009 *Directives for standardization—Part 1: Structure and drafting of standards*.
This standard replaces the T/CCFIA 001-2016 *"Canned mackerel in brine"* and the T/CCFIA 002-2016 *"Canned mackerel in tomato sauce"*. In addition to a number of editorial changes, the following technical deviations have been made with respect to the T/CCFIA 001—2016 and the T/CCFIA 002—2016.
— merged the 2 standards and unified the standard title to "Canned mackerel";

—modified the requirements of solid ;
— added the requirements of histamine limit;
—added normative Annex A.

This standard was proposed and prepared by China Canned Food Industry Association.
The main drafting units of this standard: Fujian Zishan Group Co., Ltd., Tropical Food Manufacturing (Ningbo) Co., Ltd., Rongcheng Shidao Guangxin Food Co.,Ltd., Zhangzhou Tan Co., Ltd., Qingdao Ocean Garden Imp. &Exp. Co., Ltd., Zhangzhou Gangchang Industry & Trade Co., Ltd., Longhai Haichang Foods Co.,Ltd., Ningbo Today Food Co., Ltd.
The main drafters of this standard: Liao Jianfu,Lin Peimao,Sun Yiming,Chen Junxing,Wendy Zhang,Huang Meiduan,Chen Yijie,Chen Yifang.

Canned mackerel

1 Scope

This standard specifies the terms and definitions, product classification, technical requirements, inspection methods, inspection rules, packaging, transport and storage for canned mackerel.
This standard is applicable to canned foods use fresh or frozen mackerel as raw materials and produced through processing, canning, seasoning, sealing, sterilization and cooling.

2 Normative references

The following referenced documents are indispensable for the application 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.

GB 2733 National food safety standard Fresh and frozen animal fishery products
GB 2760 National food safety standard Standards for uses of food additives
GB 2762 National food safety standard Contaminant limit in foods
GB 4789.26 National food safety standard Food microbiological test Commercial sterility test
GB 5009.44 National food safety standard Determination of chloride in foods
GB 5009.208 National food safety standard Determination of biogenic amine in foods
GB/T 5461 Edible salt
GB 5749 Standards for drinking water quality
GB 8950 National food safety standard Hygienic specifications for canned food production
GB/T 10786 Analytical methods of canned food
GB/T 14215 Canned tomato paste
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

crush
the fish body is broken, disconnected, scattered and loses its original form

3.2
blood protein
blood protein coagulum that adheres to the surface of the fish, suspends in liquid content, or precipitates in empty cans

3.3
maximum can filling amount
the can filling mass that is set in the sterilization procedure, it is higher than the normal can filling amount, generally it shall be 5% higher in order to ensure product safety

3.4
ferric sulfide
the loose and untight black substance generates by reaction of sulfur-containing compound in the content and iron in the can body

4 Product classification

According to different product recipes, canned mackerel can be divided into canned mackerel in brine, canned mackerel in tomato sauce, canned mackerel in oil and other seasoned canned mackerel.

5 Technical requirements

5.1 Raw and supplemental materials

5.1.1 Mackerel

Mackerel used shall comply with the requirements of GB 2733.

5.1.2 Edible salt

Edible salt used shall comply with the requirements of GB/T 5461.

5.1.3 Water

Water used shall comply with the requirements of GB 5749.

5.1.4 Tomato paste

Tomato paste used shall comply with the requirements of GB/T 14215.

5.1.5 Other raw and auxiliary materials

Other raw and auxiliary materials used shall comply with the requirements of other corresponding standards.

5.2 Sensory requirements

Sensory requirements of canned mackerel shall conform to requirements of Annex A.

5.3 Physical and chemical requirements

Physical and chemical characteristics shall in accordance with the requirements given in Table 1.

Table 1 Physical and chemical requirements

Items		Requirements
Solid content (%) ≥		50
Sodium chloride content	Canned mackerel in brine, tomato sauce and oil (%) ≤	3.5
	Other seasoned canned mackerel (%) ≤	6.5
Histamine (mg/kg) ≤		200[a]
Contaminant limits		Shall comply with the requirements of GB 2762
Microbial limits		Shall comply with the commercial sterility requirements of canned food, carry out the microbiological tests as specified in GB 4789.26
Food additives		Shall comply with the requirements of GB 2760
[a] The content of histamine in a single can shall not exceed 200 mg/kg and the average value of each lot shall not exceed 100 mg/kg.		

5.4 Production process requirements

5.4.1 Hygienic specifications for production process

Hygienic specifications shall meet the requirements of GB 8950.

5.4.2 Processing requirements

5.4.2.1 Processing time requirements

Processing time control before cooking: If the ambient temperature is not more than 21℃, the processing time shall not exceed 24h. If the ambient temperature is higher than 21℃, the processing time shall not exceed 12 h.

5.4.2.2 Thawing

Temperature of the fish body after thawing shall not exceed 4℃.

5.4.2.3 Processing

Remove head, tail and completely remove the internal organs of the fish body, cut off anus if necessary. Open the fish belly, wash it manually or clean by air bubbling method.

5.4.2.4 Brining

Fully brine to dehydrate the fish body.

5.4.2.5 Can filling

The can filling amount cannot exceed the maximum filling amount.

5.4.2.6 Pre-cooking

The pre-cooking time shall be15-25 minutes, and the pre-cooking temperature shall not be lower than 95℃.

6 Test methods

6.1 Sensory

Carry out the tests given in Annex A.

6.2 Solids

Carry out the tests as specified in GB/T 10786.

6.3 Sodium chloride

Carry out the tests as specified in GB 5009.44.

6.4 Histamine

Carry out the tests as specified in GB 5009.208.

7 Inspection rules

Inspection rules shall comply with the requirements of QB/T 1006, in which the sensory index, net content, solid content, sodium chloride and microbial limits are the items for factory inspection.

8 Packaging, marking, transport and storage

Packaging, marking, transport and storage shall comply with the requirements of QB/T 4631.

Annex A
(normative)
Sensory quality evaluation

A.1 General

On the basis that canned mackerel comply with the physical and chemical requirements of this standard, this part evaluates product's sensory quality to meet consumers' acceptability and satisfaction.
The systematic assessment used in this part provides a fundamental basis for evaluating the sensory quality of the product.
This part intends to provide a detailed guidance on systematic assessment to comply with sensory evaluation requirements of the product.

A.2 Basic requirements

A.2.1 Carry out the sensory characteristics (appearance, odor, flavor, and texture) evaluation given in the scoring system of Clause A.5 for each can.

A.2.2 Score and calculate sensory quality of all samples, full score is 20 points.

A.2.3 Judge unqualified product, qualified product and high-grade product according to the average score of each can.

A.3 Basic test conditions

A.3.1 Test room: It shall be set up exclusively, with sufficient light, suitable temperature and maintained ventilation inside.

A.3.2 Inspector: He/she shall have normal senses of taste, olfaction and vision. He/she shall be familiar with the product and qualified for at least 10 hours of sensory training. The inspector's continuous sensory inspection time shall not exceed 2 hours.

A.4 Steps

A.4.1 Required facilities

In addition to the basic facilities for sensory evaluation, the following articles shall also be prepared:

a) can opener
b) white plate (white porcelain plate, plastic plate, etc.)
c) stainless steel spoon
d) disposable envelope (if necessary)
e) score sheet

A.4.2 Sample preparation

A.4.2.1 Sampling: Sampling shall comply with requirements of QB/T 1006.
A.4.2.2 Each sample shall have a distinguishable mark or code.
A.4.2.3 Enough space shall be left between the cans with printed code. Samples of the same lot can be placed parallel to the white plate with the same code.
A.4.2.4 Open the can with a can opener and carefully pour the solids and liquid into the coded white plate. Pour with care to keep integrity of the solids. Carefully spread the solids. Each white plate is equipped with a spoon.

A.4.3 Sample evaluation

A.4.3.1 Carry out evaluation for each can according to the following sensory characteristics in order to use the scoring criteria of clause A.5:
a) appearance (color in general, physical defects);
b) odor;
c) flavor;
d) texture (quality of fish).
Each sensory characteristic shall be independently assessed with a score of 0-5.

A.4.3.2 For sample appearance assessment, observe presentation form, packaging mode, specification and content state.

A.4.3.3 For odor assessment, the following aspects shall be noted:
a) complete the odor assessment within 1-5 minutes after opening the can;
b) content shall be wholly assessed;
c) select fish from each can at a ratio of 1:3 and gently mash with fingers, smell the fish and overall score the odor;
d) If the sample has an unacceptable odor, test other samples for a whole assessment.

A.4.3.4 For taste assessment, the following aspects shall be noted:

a) taste of the sample shall be consistent with taste of the fish;
b) selecting fish meat from each can at a ratio of 1:3;
c) chew the sample thoroughly and assess overall score the taste.

A.4.3.5 For fish texture assessment, the following aspects shall be noted:
a) select fish meat from each can at a ratio of 1:3;

b) place the fish meat in a separate plate with the belly facing up and use a spoon to divide the fish into 2 pieces. Observe the appearance;
c) smash 1 piece of fish meat, gently press it with fingers, feel the texture and feel the tissue by crushing;
d) pick out the fish bone and press the fish meat to feel the texture;
e) evaluation by overall scoring;
f) if the texture of the product under inspection is unacceptable, test other items and give an overall evaluation.

A.5 Sample rating

A.5.1 Appearance

Color, characteristics, fish shape and defects of the product shall be considered comprehensively. Physical defects include bruise, break or crush, fish head residue, fin, peeled skin, parasite and foreign matter exist. The scoring requirements are given in Table A.1.

Table A.1. Appearance scoring requirements

Description	Score
Typical metallic, silver-gray skin, no broken, crushed fish bodies and fish head residue, fins, broken fish skin, internal organs; no obvious bruises and peeling, no foreign matter, no use of other fish species, no parasites, no iron sulfide.	5
Basically metallic, silver-gray skin, no foreign matter, no use of other fish species. Slight bruises, peel, break, crush, fish head residue, fins, internal organs, parasites[a], iron sulfide may be accept.	4
Lack of typical metallic, silver-gray skin, no foreign matter, slight iron sulfide from tinplate, but contents not contaminated. Bruises, break, crush, fish head residue, fins, internal organs, peeled skin and parasites[b] shall be within acceptable limits.	3
No foreign matter, iron sulfide from tinplate, slightly contents contamination. A certain amount of bruises, breaks, crushes, fish head residues, fins, internal organs, peeled skin, parasites[c]	2→1
A large number of bruises, breaks, crushes, fish head residues, fins, internal organs, peeled skin, parasites[d], foreign matters, obvious iron sulfide pollution from tinplate.	0
Note: Iron sulfide only applies for tinplate packaging products.	

[a] Exist in a very small amount, it is not possible to be found by ordinary consumers, a there could be 1 inactivated parasite which is visible to the naked eye. [b] It is possible to be noticed, but not offensive to most consumers, there could be 2 inactivated parasites which are visible to the naked eye. [c] Not acceptable to most consumers, there could be 3 or more inactivated parasites which are visible to the naked eye. [d] Exist parasite cluster.

A.5.2 Odor

The odor scoring requirements are given in Table A.2.

Table A.2. Odor scoring requirements

Description	Score
With mild and typical odors that canned fresh mackerel shall have.	5
With the odor that canned mackerel shall have.	4
Slight off odor[a], such as acidic, burnt, caramel odors, etc.	3
Slight unacceptable odors[b], such as metallic, putrid smell, musty smell and the like.	2→1
Significantly unacceptable odors, such as metallic, putrid and very strong oxidative odors.	0
[a] Neither noticeable nor offensive to most consumers. [b] Noticeable but probably not offensive to consumers.	

A.5.3 Flavor

The scoring requirements are given in Table A.3.

Table A.3 Flavor scoring requirements

Description	Score
With the good flavor of canned fresh mackerel	5
With the flavor that canned mackerel shall have	4
Slightly off flavors [a], such as metallic, woody, grassy and burnt flavors, etc.	3
Slightly unacceptable flavors [b] such as bitter or metal, etc.	2→1
Unacceptable flavor such as putrid, bitter or sulfur flavors.	0
[a] Neither noticeable nor offensive to most consumers. [b] Noticeable but probably not offensive to consumers.	

A.5.4 Texture

The scoring requirements are given in Table A.4.

Table A.4 Texture scoring requirements

Description	Score
Fish meat is firm neither too hard nor too soft, no hard bones.	5
Fish meat is relatively firm hardness is fine, no hard bones.	4
Fish meat is slightly loose, with hard fish bones[a] that cannot be mashed by the thumb and index finger.	3
Fish meat is loose and broken, with hard fish bones[b] that cannot be mashed by the thumb and index finger.	2→1
Fish meat is mushy, with hard fish bones that cannot be mashed by thumb and index finger.	0
[a] Not offensive to most consumers. [b] Offensive to consumers.	

A.6 Judgment

A.6.1 Calculate the total sensory score of each can: the original score of each item times the corresponding coefficient to calculate the score. (The appearance coefficient is 0.8, the odor coefficient is 1.2, the flavor coefficient is 1.2 and the texture coefficient is 0.8.)

A.6.2 Judge unqualified product, qualified product and high-grade product basing on the total score of each can. The judging rules are as follows:

a) if the total score of the can is ≥ 16, it is regarded as a high-grade product;

b) if the total score of the can is ≥12, it is regarded as a qualified product;

c) If the total score of the can is <12, it is regarded as a unqualified product.

A.6.3 Record the number of qualified and unqualified products.

Judge the lot as first grade product, qualified product or unqualified product as specified in QB/T 1006.