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National Standard of the People's Republic of China

GB 10136-200X
Substitution for GB 10136-1988

Hygienic standard for salt & liquor-saturated
aquatic products of animal origin
(submitted for approval)

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Standardization Administration

Introduction

This standard substitutes GB10136-1988 "Hygienic Standard for Crab Paste (Crab Sauce)", which shall become invalid at the same time.

In comparison with GB13106-1988, this standard mainly contains the following modifications:

Standard text format modified according to GB/T1.1-2000;

Additional requirements for raw materials, food additives and production process, and other requirements for package, marking and storage are added.

The application is extended to "directly edible, salt and liquor-saturated aquatic products made from mud snails, river crab, amphibious crab, river shrimp, shellfish and fresh sea crab as raw materials, with or without auxiliary materials."

This standard is renamed as "Hygienic Standard for salt and liquor-saturated aquatic products of animal origin";

Standards of lead, inorganic arsenic, methyl mercury, cadmium, volatile salt based nitrogen, polychlorinated biphenyl, para- hemolytic vibrio, Shiga bacillus and parasite are added;

Colony count changed from ≤ 50000 cfu/g to ≤ 5000 cfu/g; sodium chloride from $\geq 15\%$ to $\geq 7\text{g}/100\text{g}$ under freezing conditions and $\geq 15\text{g}/100\text{g}$ under room temperature conditions.

The Annex A and Annex B of the standard are the normalization Annexes.

The original standard, GB10136-1988, is automatically annulled at the time of this adoption.

This standard is put forward and governed by the Ministry of Public Health of the People's Republic of China.

This standard is worked out by: Shanghai Municipal Sanitary Inspection Institute, Liaoning Provincial Sanitary Inspection Institute, Ningbo Municipal Sanitation and Antiepidemic Station, Ningbo Shenyue Laobanniang Food Co. Ltd., Shengsi County Sanitation and Antiepidemic Station.

The standard was authored by: Chen Min, Gu Zhenhua, Wang Zheng, Ji Ling, Hu Zhixing and Gong Yueping.

This is the first revision of the previous standard issued on January 11, 1989.

Hygienic Standard for Salt & Liquor-Saturated Aquatic Products of Animal Origin

1 Scope

This standard stipulates the definitions of salt and liquor-saturated aquatic products and the index requirements, food additives, hygienic requirement for production process, and package, marking, storage and transport and method of inspection.

This standard applies to directly edible, salt and liquor-saturated aquatic products made from mud snails, river crab, amphibious crab, river shrimp, shellfish and fresh sea crab as raw materials, with or without auxiliary materials.

This standard also applies to aquatic products made from fresh portunid through washing, removing shell, branchial bar and leg tips, minced with salt.

2 Referenced documents

The clauses in the following documents are referenced in this standard and become the clauses of this standard. Any modification lists (except text corrections) or revisions of the reference documents with specific date shall not apply to this standard. But, all parties of agreement based on this standard are encouraged to discuss if the newer versions of those documents are applicable. All reference documents without date that are the latest editions are applicable to this standard.

GB 2733	Hygienic standard for fresh and frozen animal aquatic products
GB 2760	Hygienic standard for food additive use
GB/T 4789.20	Food hygienic microbiological assay for aquatic product food inspection
GB/T 5009.11	Measurement of total arsenic and inorganic arsenic in food
GB/T 5009.12	Measurement of lead in food
GB/T 5009.15	Measurement of cadmium in food
GB/T 5009.17	Measurement of total mercury and organic mercury in food
GB/T 5009.26	Measurement of N-nitrosamines in food
GB/T 5009.39	Analytical method for hygienic standard of soy sauce
GB/T 5009.44	Analytical method for hygienic standard of meat and meat products
GB/T 5009.190	Measurement of polychlorinated biphenyl in marine products
GB 14881	General hygiene specification for food enterprises

3 Definitions

This standard adopts the following definitions:

3.1 Salt saturated: a processing method of pickling with salt.

3.2 Liquor saturated: a processing method of soaking in liquor or/and yellow rice wine.

4 Requirements of Indexes

4.1 Requirements of raw materials and auxiliary materials

4.1.1 Raw materials: Conform to GB2733 hygienic standard for fresh and frozen aquatic products of animal origin. Mud snails, river crabs, amphibious crabs, river shrimps and shellfish must be fresh and alive.

4.1.2 Auxiliary materials: conform to relevant standards and regulations.

4.2 Sensory indexes

Sensory indexes should conform to the stipulations in Table 1.

Table 1 Sensory Index

Indexes	Requirements
Color	Having the natural color of the product
Taste and odor	Having the natural taste and odor for the variety, without offensive taste or odor
Impurities	No impurity

4.3 Standards of Physical and chemical index

Physical and chemical index should conform to the stipulations in Table 2.

Table 2 Physical and chemical index

Indexes		Standards
Volatile salt based nitrogen mg/100g		
Crab pieces, crab paste	≤	25
Salt (as NaCl), g/100g		
Room temperature preservation	≤	15
Cold storage preservation (4 degrees C or lower)	≤	7
Lead (Pb), mg/kg	≤	0.5
Inorganic arsenic, mg/kg	≤	0.5
Methyl mercury, mg/kg		
Predatory fish	≤	1.0
Other aquatic products of animal origin	≤	0.5
Cadmium (Cd), mg/kg		
Shrimp and crab (crustacean)	≤	0.5
Shellfish	≤	1.0
N-dimethyl nitrosamine ^a , μ g/kg	≤	4
Polychlorinated biphenyl ^b , mg/kg	≤	2.0
Where PCB138 mg/kg	≤	0.5
PCB153 mg/kg	≤	0.5
^a Only for marine products;		
^b Only for marine products, calculated as the sum of PCB28, PCB52, PCB101, PCB118, PCB138, PCB153 and PCB180.		

4.4 Microorganism indexes

Microorganism index should conform to the stipulations in Table 3.

Table 3 Microorganism index

Indexes		Standards
Total colony count, cfu/g	≤	5000
Coliform flora, MPN/100g	≤	30
Pathogen (Salmonella, Para-hemolytic vibrio, Shiga bacillus, Staphylococcus aureus)		Must not be detected

4.5 Parasite metacercaria index

Parasite metacercaria should not be detected.

5 Food additives

5.1 The quality of food additives should conform to relevant standards and regulations.

5.2 The variety and quantity of food additives should conform to GB 2760.

6 Hygienic requirements in food production process

Must conform to GB14881 and the regulations in Annex A.

7 Packaging

The packing container and materials should conform to relevant hygienic standard and regulations.

8 Marking

8.1 Marking on shaped package products should conform to relevant regulations. The preservation temperature should be indicated.

9 Storage and transport

9.1 Storage

The products should be stored in a dry and well-ventilated place. It should not be stored together with any poisonous, harmful, smelling, volatile, perishable articles. The product for cold store must be kept at 4 degree Celsius or lower or at the specified temperature.

9.2 Transport

During transport, the products should be protected against sunshine and rain, and should not be kept together with any poisonous, harmful, smelling or other articles affecting the product quality. The product for cold transport must be kept at 4°C or lower or at the specified temperature.

10 Inspection methodology

10.1 Sensory indexes

Take some sample and observe the color, smell and taste.

10.2 Physical and chemical index

10.2.1 Volatile salt based nitrogen: according to GB/T 5009.44.

10.2.2 Salt: According to GB/T5009.39.

10.2.3 Inorganic arsenic: According to GB/T5009.11.

10.2.4 Lead: According to GB/T5009.12.

10.2.5 Cadmium: According to GB/T5009.15.

10.2.6 Total mercury: According to GB/T5009.17.

10.2.7 Polychlorinated biphenyl: According to GB/T5009.190.

10.2.8 N-dimethyl nitrosamine: According to GB/T5009.26.

10.3 Microorganism index: According to GB/T4789.20.

10.4 Parasite metacercaria: according to Annex B.

Annex A
(Normalization Annex)
Hygienic requirements for processing in production

A1 Hygiene of raw materials

The raw materials for salt and liquor saturated aquatic products of animal origin should be pollution-free and conform to the requirements of 4.1 of the standard. Raw materials must be inspected before use, and inspection records must be kept in file.

A2 Hygienic requirements for working space and facilities

A special space shall be used for production of salt and liquor saturated aquatic products of animal origin. According to production flow and processing technic, the raw materials store and workshops for treatment, salt and liquor pickling, cooking, package and finished product storage should be separately and reasonably arranged. The floor shall be paved with antiskid materials of no water seepage or absorption and innocuous, with a proper gradient. Walls shall be painted with materials of no water seepage or absorption and innocuous. Wall skirts of ceramic tiles or other antiseptic finish, not lower than 1.5m, shall be made. Any section where finished products may be touched (including final salt and liquor pickling, cooking and package, etc.) shall be fly-proofing and dust-proofing, with secondary clothe changing room, hand wash, sterilization and other sanitary facilities.

A3 Hygiene requirements in the process

A3.1 Hygiene of processing appliance and vessels

Appliances and vessels for production of salt and liquor saturated aquatic products of animal origin must meet relevant hygienic standards and hygienic requirements. The appliances and vessels that may touch the finished products must be effectively cleaned and sterilized.

A3.2 Personal hygiene

Staff members dealing in the processing of salt and liquor saturated aquatic products of animal origin must qualified through health examination and hygiene knowledge training, with health certificate and training certificate. Clean working suits and caps must be worn during work. Hands must be washed before work. When touching finished products, mouth-piece must be worn and hands sterilized.

A3.3 Hygiene of formulae and process

Salt and liquor saturated aquatic products of animal origin must be processed in strict accordance with specified formulae and process.

A3.4 Hygienic control

Producer of salt and liquor saturated aquatic products of animal origin shall use the method of hazard analysis critical control points according to the products, so as to control the hygiene of each critical control points in raw material treatment and processing and guarantee the safety and hygiene of the products.

A4 Hygiene of finished product

A4.1 Inspection of finished product

The finished products of salt and liquor saturated aquatic products of animal origin must conform to the hygienic requirements of this standard. Each batch of the products must be checked before leaving the workshop.

A4.2 Storage and marketing of finished products

The finished products must be stored in a clean finished goods store room, and must not be mixed with poisonous and dangerous articles. The products needing cold

store must be kept in special refrigerator (cabinet) at 4 degree Celsius or lower for storage or selling.

A4.2 Transport of finished product

The transport vehicle of finished products shall be dry and clean, avoiding intensive shocks, sunshine and rain. Handling with care. Never transport together with poisonous or dangerous articles. The products requiring cold store must be transported with special refrigerated truck.

Annex B
(Normalization Annex)
Parasite metacercaria inspection

B1 Reagent

Artificial digestion solution: Dissolve 5.5g of pepsin (rough) in 90ml of distilled water. Add 0.7ml of concentrated hydrochloric acid. Then, add water to 100ml. Thoroughly stir and stand for 15min before use.

B2 Equipments

B2.1 Microscope

B2.2 Water bath or incubator at 37°C

B2.3 Food blender

B3 Specimen preparation

Take the muscle in a food blender to make a homogenization. Transfer the suspension into a conical flask and add with 1: 1 artificial digestion solution. Mix it thoroughly. Keep the flask in water bath at 35-37°C for 4 to 5h to allow the meat fully digested. Draw a small volume of the upper clear fluid with a pipette and add in some distilled water. Stir it and keep it for 20-30min for sedimentation. Draw some of the upper clear fluid again and rinse for several times, until the upper clear fluid becomes transparent. Keep it still for sedimentation before use.

B4 Inspection

Take a small amount of the sediment after the above-mentioned treatment and put it under the microscope. Dilute it with distilled water and observe for any parasite metacercaria.